

Abstracts
Canada

Department of Marine and Fisheries, Canada

METEOROLOGICAL SERVICE

MONTHLY WEATHER REVIEW

BY

R. F. STUPART, Director

119189
17/10/11

1907

TORONTO

DEPARTMENT OF MARINE AND FISHERIES, CANADA.

METEOROLOGICAL SERVICE.

Monthly Weather Review.

VOL. XXXI.

JANUARY, 1907.

No. 1.

INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

REMARKS UPON THE WEATHER.

The weather in British Columbia during January was exceedingly cold, the mean temperature ranging from 6° below average near the coast to as much as 22° below in the Upper Mainland. Fine weather prevailed, and the precipitation which was chiefly snow, occurred at most places on or about the 2nd, 3rd, 4th, 17th to 22nd and last two or three days of the month. On the 31st the accumulated snow lay to a great depth over the Upper Mainland. Sleighing was possible in Vancouver throughout the month which is quite phenomenal.

In the Western Provinces the weather was almost phenomenally cold, the negative departure in the mean temperature being from 11° to 25° below the average and the minimum temperature between 40° and 50° below zero at many places. The proportion of bright sunshine exceeded the average and the snow which was recorded chiefly on or about the 1st, 2nd, 3rd, 4th, 7th to 10th, 18th, 20th, 23rd to 25th and 21st, accumulated to an unusual depth and was much drifted by high winds. It may safely be said that such severe weather has not been felt in many years.

The weather in Manitoba was not quite so cold as in the last named provinces, but the mean temperature was well below the average and the lowest actual readings were more than 40° below zero at many stations. Much dull weather with fresh winds was general during the first half of the month, and although strong winds were somewhat frequent during the second half, the weather was much brighter. The falls of snow, which varied with the district considerably, occurred chiefly on or about the 2nd, 3rd, 4th, 9th, 19th, 23rd and 31st, the quantity being below the average at some places and above at others.

In Ontario the weather was exceedingly mild during the first half of the month and unusually cold during the second half. Gales with much rain occurred on the 3rd, excepting near Lake Superior when there was light snow. On the 4th and 5th there was light snow over the Georgian Bay and Ottawa and Upper St. Lawrence Valleys. On the night of the 6th there were local showers and on the following day heavy rain in districts contiguous to the Lower Lakes and Lake Huron. On the 8th and 9th, gales occurred with snow flurries and on the 10th the gales continued with heavy snow, except in Lower Lake districts where there were only snow flurries. On the 12th there were moderate snowfalls accompanied by gales. On the 13th and 14th there were showers near Lakes Huron, Erie and Ontario and snow flurries elsewhere. On the 16th and 17th a heavy fall of snow occurred in Lower Lake districts and locally near Lake Superior, flurries being recorded elsewhere. On the 18th snow flurries were general. On the 19th rain occurred generally except in the Ottawa Valley where there was snow turning to rain and over the Lake Superior District where there was snow with gales. On the 20th, 21st and 22nd snow flurries were general except near Lake Huron where the snow was heavy. On the 24th and 25th heavy snowfalls were reported from the western portion of the province whilst elsewhere there were only flurries. On the 25th, 26th and 27th falls of snow occurred at most places, they being heaviest near the Georgian Bay. On the 28th there were snow flurries in districts contiguous to Georgian Bay, Lake Erie, Huron and Ontario. On the 29th and 31st there were light snowfalls or flurries in all districts. In most localities the proportion of bright sunshine departed little from the average, but in the extreme western portion of the province it was below the average. Elsewhere there was more sunshine and at most places the proportion was excessive.

The weather in the Province of Quebec was comparatively mild during the first eight or nine days after which it was exceedingly cold to the end of the month, excepting on the 19th and 20th when it was quite mild. Clouds and sunshine followed in quick succession and falls of flurries of snow were frequent more especially from the 8th to 22nd, but they were mostly light and the total precipitation was below the average. High winds occurred quite frequently and the snow was much drifted. The depth of snow on the 1st and on the 31st was from 18 to 26 inches in western districts and 46 to 48 inches elsewhere.

In New Brunswick the weather was quite cold after the 8th, and the mean temperature was below the average. Much fine bright weather was recorded during the second half of the month and in most localities the precipitation was deficient. Heavy rain occurred at many places on the 1st, also smaller quantities on the three succeeding days, and snow was reported on or about the 9th, 11th, 14th, 20th, 23rd, 25th and 31st. Up to the 9th the ground was bare near the Bay of Fundy. On the 31st the depth throughout the greater portion of the Province was from four to eleven inches.

The weather in Nova Scotia was unusually cold and after the 9th temperatures below zero were recorded occasionally in the more northern portions. Sudden changes of temperature also characterized the weather of the month. The amount of precipitation varied considerably in the different districts, but the chief falls were recorded from the 1st to 5th, 9th to 14th, 19th to 27th and 30th, much of this being rain in southern districts. Strong winds were of frequent occurrence and the snow was much drifted.

In Prince Edward Island the weather was exceedingly mild during the first half of the month, but during the second half it was unusually cold, and the mean temperature of the month was below the average. From the 1st to 15th the weather was mostly cloudy, but after the latter date bright sunshine was frequent. Precipitation was recorded on or about the 1st, 2nd, 5th, 9th, 12th, 15th, 18th, 19th, 23rd and 27th, much of which during the early part of the month was rain. On the 31st there was enough snow for good sleighing. —F. F. PAVSE.

ATMOSPHERIC PRESSURE.

The mean atmospheric pressure for January was subnormal throughout Canada except over British Columbia, where with local exceptions on the Lower Mainland, the normal value was not reached. Extremes of departure from average were $+0.18$ of an inch at Port Arthur, Ont., and -0.15 of an inch at Kamloops, B.C.

HIGH AREAS.

Twelve very pronounced anti-cyclonic formations were traced across the Continent during January.

With the exception of one system which traversed the Southern portion of the Continent during the first week of the month, all high pressure areas entered the field of observation over the Yukon Territory and passed southeastward to the Atlantic.

Severe cold waves accompanied many of the systems and were, as a rule, most pronounced when over the Prairie Provinces.

LOW AREAS.

During the month thirteen areas of low pressure were charted, all with one exception appearing either in the western or northwestern portion of the Continent, invariably first drifting on to the Continent from the Pacific Ocean. No less than ten of the areas passed across the Lake Region. The areas were not as a rule very energetic; the disturbance which developed on the 9th in the St. Lawrence Valley and the system which traversed the Continent between the 18th and the 21st, and which were both attended by exceptionally heavy gales, were the most pronounced of the series. There was a marked absence of low areas passing up the United States Atlantic seaboard.

WINDS.

In British Columbia, on Vancouver Island, and over the mainland, the direction was chiefly between the north and east, with nine days with strong and fourteen with fresh breezes and three gales.

In Alberta and Saskatchewan the westerly direction predominated with eight days with strong and eleven with fresh breezes and three gales.

In Manitoba the westerly direction was the most general with six days with strong and thirteen with fresh breezes and three gales.

In the Lake Region the direction was variable with ten days with strong and ten with fresh breezes and five gales.

In the Ottawa and Upper St. Lawrence Valleys the direction was variable, favouring somewhat the north and west with four days with strong and thirteen with fresh breezes and five gales.

In the Lower St. Lawrence Valley and the Gulf the north and west directions chiefly prevailed with eight days with strong and six with fresh breezes and seven gales.

In the Maritime Provinces the north and west directions usually obtained with ten days with strong and seven with fresh breezes and eight gales; four of the gales were, however, of a local character, and none of the remaining four were noticeable for any exceptional violence. The heaviest gales occurred between the 11th and 12th and between the 20th and the 21st. Five storm warnings were issued during the month to those stations remaining open to winter navigation.

TEMPERATURE.

The temperature was below the average in all portions of the Dominion except in the Peninsula of Ontario where it was from average to 3 degrees above. The negative departures in British Columbia, Alberta and Saskatchewan, ranging as they did from 6 to 22 degrees, were phenomenal, and in these Provinces it was the coldest January of which the Meteorological Service has any record. In Manitoba the negative departures were also pronounced, but the mean temperature was not as low in that Province as recorded in some previous months of January. Over the greater portion of Ontario and throughout Quebec and the Maritime Provinces the negative departures ranged from 1 to 5 degrees.

The Highest and Lowest temperatures in each Province during January, 1907, were:

British Columbia,	52° 30 on 22nd at Isonhalem,	- 51° 30 on 15th at Golden.
Alberta,	48° 30 on 22nd at Pekiska,	- 56° 30 on 14th at Knee Hill and Three-hills Creek.
Saskatchewan	30° 30 on 9th at Onion Lake,	- 51° 34 on 16th at Lloydminster.
Manitoba,	32° 30 on 2nd at Carberry,	- 50° 30 on 15th at Carberry.
Ontario,	58° 37 on 19th at Birnam,	- 57° 35 on 23rd at White River.
Quebec,	49° 34 on 20th at Sherbrooke,	- 45° 30 on 24th at Abitibi.
New Brunswick,	53° 37 on 20th at Moncton,	- 30° 30 on 25th at St. Stephen.
Nova Scotia,	56° 30 on 21st at Wolfville,	- 18° 33 on 18th at Truro.
Prince Edward Island,	48° 30 on 21st at Summerside,	- 13° 30 on 16th at Summerside.

PRECIPITATION.

The precipitation was generally below the average in British Columbia, but a few isolated districts, principally in the Okanagan Valley, recorded an excess. In the Western Provinces the precipitation was all snow, which in some localities was a few inches more than the usual quantity and in others a few inches less. In Ontario the precipitation was above the average amount in the Lake Superior Region, and in the Peninsula of Ontario, and much below again in the eastern portion of the Province. In Quebec it was slightly in excess of the average in the eastern portion and deficient elsewhere. In the Maritime Provinces it was everywhere below the average except in one or two isolated localities where it was slightly above.

DEPTH OF SNOW.

At the close of the month the whole Dominion was snow covered, the depth on the ground differing materially with the district. In British Columbia the amount in most localities was considerable, even many coast stations reporting continuous sleighing throughout the month, which is most unusual. In the Western Provinces, owing to the long-continued cold weather, the snow which covered the ground at the close of 1906, with the addition of that which fell in January, amounted to a depth of from 10 to over 30 inches, a marked contrast to the conditions prevailing in January last year when in some localities the ground was bare of snow, and in others it was but slightly covered. In Ontario, in the Lake Superior district and in far northern localities the snow on the ground varied from 18 to 24 inches, elsewhere from 3 to 10 inches. In Quebec it varied from 18 to 26 inches in the western portion, to 46 and 48 inches in the eastern portion. In the Maritime Provinces it was from 4 to 11 inches, and very locally 18 inches.

THICKNESS OF ICE.

Edmonton, 30 inches; Battleford, 30 inches; Medicine Hat, 30 inches; Swift Current, 30 inches; Port Arthur, 14 inches; Port Stanley, 8 inches; Kingston, 14 inches; Rockcliffe, 30 inches; Ottawa, 30 inches; Toronto, 10 inches; Georgetown, 15 inches; Arden, 19 inches; Port Dover, 12 inches; Meaford, 10 inches; Gravenhurst, 25 inches; Brome, 26 inches; Charlottetown, 12 inches; Fredericton, 24 inches; Yarmouth, 11 inches.

BRIGHT SUNSHINE.

The amount of bright sunshine recorded during January was subnormal along the shores of Lake Ontario and in the Ottawa and St. Lawrence Valleys; elsewhere in Canada a supernormal value was registered.

Extremes of departure from average were 26% at Battleford, Sask., and -10% at Montreal, Que., and the possible daily amount of sunshine was recorded at Battleford on the 6th.

ALBERTA—

[illegible]

2000

Alameda	9	1	102	17	1892	30	26	33	74	29	66	1	08	17	17	17	17	2	28	0	1	30	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11</
---------	---	---	-----	----	------	----	----	----	----	----	----	---	----	----	----	----	----	---	----	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	------

1999

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS OF AN ADVANCED

[illegible]

STATION.	Pressure.		Temperature.		Humidity.		Wind.		Direction of Wind.		Force of Wind.		Direction of Wind.		Force of Wind.	
	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.	in.	mm.
Albany, Ga.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, N.Y.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, O.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, W.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, S.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, E.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, N.W.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, S.W.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, E.W.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, W.E.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, S.E.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, N.E.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, S.W.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, E.W.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, W.E.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, S.E.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, N.E.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, S.W.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, E.W.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, W.E.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, S.E.	30.0	760.0	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8	64.0	17.8
Albany, N.E.	30.0	760.0	64.0	17.8	64.0	17.8	6									

CONTRARIO—Concluded.

Stratford	13	23	81	0	1091	19.6	+	+	0.10	55.0	19	-12.0	23	11.2	1.45	1.35	0.83	5.26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0</
-----------	----	----	----	---	------	------	---	---	------	------	----	-------	----	------	------	------	------	------	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

Abstract.

Montreal ..	45	30	73	35	187	30	21	30	67	26	10	1	57	19	7	179	33	13	10	20	21	0	17	14	1	6	4	1	16	5	16	3	3	7	6	11	17	0	62	36	1	20	6	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0	
-------------	----	----	----	----	-----	----	----	----	----	----	----	---	----	----	---	-----	----	----	----	----	----	---	----	----	---	---	---	---	----	---	----	---	---	---	---	----	----	---	----	----	---	----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	--

2007-2008

THE POSITION OF SOLUBLE POLYMER IN THE POLYMERIZATION OF VINYL MONOMERS

the first three terms of the expansion of $\log \Gamma(x)$ in powers of $1/x$ are

[illegible]

PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c., DURING JANUARY, 1907.

STATION.	RAIN FALL					SNOW FALL				REMARKS
	Amount in inches	No. of Days, 01. or Over	No. of Fair Days	Heaviest Fall in Month	Date	Amount in inches	No. of Days	Heaviest Fall in Month	Date.	
BRITISH COLUMBIA										
Cootnam ..	8.34	5	20	3.61	20-21	16.2	7	9.0	17-8	
Denman Island	3.80									
Goldstream Lake.	3.86	9	15	1.05	20	33.0	8	10.0	19	
Hartley Bay	1.25	2	22	1.20	22	53.0	7	20.0	19-20	
Nasas Harbour			27			14.0	5	24.0	20	
Nanaimo ..	1.85	5	23	1.15	19-20	16.0	4	10.0	2	
Royal Oak	1.08	4	25	1.23	19	2.0	2	1.0	1	
Sonias River	3.30	3	18	2.80	20	25.0	10	7.0	3	
ALBERTA										
Bismark			23			17.5	8	5.0	21	
Bardo ..			27			1.0	4	2.0	21	
Beaver Hills, W.			25			6.5	6	3.0	20-21	
Bruderheim			30			6.0	4	6.0	21	
Dorence.			21			20.0	7	7.0	10	
Conjuring Creek			26			12.3	5	6.2	20-21	11 and 20 Mercury frozen.
Coutts			18			26.0	13	6.0	11-12	10th 42.0
Grassy Lake			24			13.0	7	4.0	10	15th 45.0
Heather Brae			23			13.8	8	7.2	20-21	10th 56.0, 15th 54
Imperial			5			10.0	5	7.0	10	
Islay			4			3.4	4	2.5	2	
Josephburg.			6			12.5	6	4.0	22	
Jumping Pound			5			5.8	5	4.0	11	
Lacombe			19			12.0	12	1.0	11	
Macleod			4			4.0	4	1.5	28	
Magrath.			7			23.0	7	6.0	12	
Mayton.			27			13.0	4	8.0	10-11	
Ponoka.			26			10.0	5	6.0	20-21	
Stirling			27			11.0	4	6.0	3-4	
Saddle Lake.			30			1.0	4	1.0	21	
Sion			29			5.0	2	1.0	21	
Wabamun			21			13.1	10	5.0	20	
Clover Bar						6.0	4	6.0	16	
Vermilion						7	2			
Morienville ..						2.0	2	1.5	3	
SASKATCHEWAN—										
Elm How			5			12.0	5	5.0	1	
Insinger.			28			4.5	3	3.0	31	
East Mountain.			28			12.0	3			Very strong winds.
Regina			23			12.2	8	4.0	23-24	
MANITOBA										
Cartwright..			25			8.0	6	3.0	1	22nd-32 blizzard.
Gretna			26			13.5	4	6.0	2	
Norquay ..			24			14.5	7	4.0	2	
Rapid City			19			6.5	12	2.5	2	13th-40
ONTARIO										
Aurora ..	1.73	5	15	0.80	3	9.5	10	2.8	12	
Georgetown	2.33	6	8	0.81	3	13.0	18	1.0	12	
Strathroy	3.54	7	16	0.90	7	18.0	8	4.0	23	Fog, 6, 7, 11, 18, 19, 31.
Wyoming	3.05	4	22	1.10	7	13.0	5	5.0	22	Thunder, 7, 8, 20th, Crows.
Arden	2.13	6	19	0.85	20	11.0	6	4.0	11	Thunder, 7, 8.
Goderich	2.10	3	22	1.00	19	9.0	6	2.0	12	
Parma	2.35	1	25	1.00	4	5.0	2	3.0	26	
Sydenham ..	1.75	3	25	1.25	25	15.0	3	6.0	13	
Montague.	0.61	2	25	0.51	19	9.0	5	4.0	31	
Laundowne...	1.10	3	27	0.77	4	2.0	1	2.0	10	
MacCue.	0.75	2	23	0.75	19-20	10.0	6	4.0	12	
Princeton.	2.95	6	18	1.15	3-4	10.5	6	3.0	13	
Ennismore	1.50	1	28	1.50	19	5.0	2	3.0	25	Fog, 3, 7.
Westport	1.88	4	21	0.86	3	7.8	6	2.5	12	
Huntsville..	1.11	2	21	0.79	19	15.0	8	7.0	10	23rd-20
Wooler ..	1.57	4	22	0.81	3	4.5	6	2.0	12	
Croydon	1.80	2	26	1.20	19	10.0	3	1.0	12	
Ensdale	1.08	3	17	0.89	19	13.3	11	5.5	14	
Orangeville.	4.12	6	18	1.50	3	9.5	7	5.1	12	
Westminster..	2.18	5	22	1.33	8	3.0	5	3.0	31	
Midland.			19			23.8	12	6.0	24	
Deer Park	2.11	4	20	1.06	3	14.2	6	4.8	16	
Warton ..	0.68	2	19	0.45	19	22.0	10	6.0	25	
Dutton	3.58	4	21	1.33	3	7.0	3	3.0	23	
Watford	3.13	1	27	0.95						No snow recorded.
NEW BRUNSWICK—										
Point Escomiac	0.16	3	21	0.11	2	15.0	7	5.0	24	

PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF JANUARY 1905

	HOURS ENDING														
	0 a.m.	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon	1 p.m.	2 p.m.
Victoria				0.01	0.20	0.36	0.47	0.55	0.63	0.47	0.40	0.18	0.00		
Nanaimo				0.02	0.04	0.24	0.38	0.43	0.43	0.45	0.44	0.21	0.00		
Agassiz				0.00	0.00	0.34	0.52	0.54	0.52	0.44	0.30	0.16	0.00		
Kamloops				0.00	0.01	0.13	0.27	0.44	0.53	0.53	0.31	0.07	0.00		
Battleford				0.15	0.57	0.69	0.70	0.84	0.73	0.71	0.67	0.26	0.00		
Edmonton															
Medicine Hat				0.03	0.20	0.44	0.54	0.55	0.53	0.41	0.30	0.07	0.00		
Edmonton				0.00	0.11	0.42	0.57	0.46	0.49	0.42	0.40	0.18	0.00		
Indian Head				0.00	0.00	0.44	0.58	0.63	0.54	0.55	0.40	0.07	0.00		
Brandon				0.00	0.15	0.37	0.55	0.66	0.61	0.58	0.58	0.44	0.02		
Winnipeg				0.04	0.31	0.51	0.54	0.46	0.46	0.46	0.47	0.20	0.00		
Woodstock				0.03	0.13	0.27	0.26	0.26	0.23	0.32	0.28	0.18	0.00		
Toronto				0.00	0.15	0.24	0.20	0.20	0.27	0.26	0.34	0.33	0.13		
Lindsay				0.06	0.11	0.18	0.30	0.29	0.26	0.20	0.30	0.26	0.20		
Barrie				0.02	0.12	0.22	0.27	0.26	0.24	0.28	0.27	0.19	0.00		
Gravenhurst				0.00	0.18	0.24	0.30	0.32	0.34	0.37	0.37	0.28	0.15		
Haliburton				0.03	0.25	0.40	0.39	0.41	0.46	0.43	0.37	0.23	0.00		
Kingston				0.05	0.11	0.14	0.19	0.33	0.35	0.32	0.30	0.13	0.02		
Ottawa				0.03	0.16	0.24	0.25	0.27	0.30	0.33	0.36	0.20	0.01		
Montreal				0.00	0.15	0.14	0.26	0.26	0.30	0.33	0.31	0.18	0.00		
Sherbrooke				0.03	0.23	0.28	0.25	0.28	0.31	0.26	0.20	0.13	0.01		
Quebec				0.00	0.15	0.26	0.32	0.35	0.36	0.41	0.42	0.28	0.01		
Fredericton				0.04	0.37	0.40	0.48	0.48	0.52	0.50	0.47	0.36	0.06		
Charlottetown				0.04	0.47	0.24	0.31	0.42	0.41	0.44	0.46	0.36	0.16		
Mean proportion for month of constant sunshine being 1	0.36	0.30	0.33	0.27	0.45	0.39	0.38	0.37	0.46	0.44	0.24	0.24	0.31	0.20	0.33
Difference from average	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum daily amount	0.88	0.83	0.72	0.78	1.00	0.80	0.81	0.69	0.86	0.91	0.88	0.97	0.97	0.85	0.87
Days	25	15	22	12	6	27	26	12	31	25	5	23	23	23	22
No. of days clouded	0	15	13	6	1	10	8	6	7	8	18	15	16	14	10

Aurora recorded :

Where the class of aurora noted by the observer, it is given, *I* being the faintest, & *IV* the noblest in brilliancy.

1. Atlin, IV.
4. Aweme, III ; Insinger, II.
5. Quebec, III ; Aweme, III ; Chaplin, Foxleigh, Estevan.
6. Edmonton, III ; Foxleigh, Insinger, II.
7. Quebec, IV ; Truro, IV ; Haileybury, II.
8. Truro, IV ; Aweme, IV ; Bruce Mines, IV ; Insinger, II.
10. Aweme, III ; Insinger, II.
11. Quebec, IV ; Treherne.
12. Qu'Appelle, IV ; Insinger, IV.
13. Haileybury, IV.
14. Treherne, Aweme, II ; Chaplin, IV.
15. Edmonton, II ; Insinger, III.
16. Insinger, IV.
17. Treherne.
20. Kenora, II ; Bruce Mines, IV.
21. Bruce.
22. Haileybury, III.
24. Edmonton, IV.

Thunder recorded on :

1. Halifax.
7. London, Strathroy, Wyoming, Westminster.
8. Port Stanley, London, Port Dover, Paris, Strathroy, Wyoming.
13. Quesnel.
15. Almasippi.
19. Renfrew, Barrie, Cottam.
20. Saugeen, Renfrew, Port Dover.
27. Bermuda.
30. Bermuda.
31. Bermuda.

FORECASTS FOR JANUARY, 1907.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 1262. These were divided as follows :

District.	No. Issued.	Verdict.			
		No. Fully.	No. Partly.	No. Not.	Per- centage.
Quebec	7	66	11	7	81.9
St. Kitts	84	66	10	8	81.3
Montreal	92	72	13	7	80.3
Lake Superior (North of 45°)	103	77	20	6	81.3
Lake Lake Region	104	74	22	8	81.7
Georgian Bay	105	78	19	8	84.3
Ontario (Windsor)	110	73	31	6	80.4
Upper St. Lawrence	110	75	28	7	80.9
Lower St. Lawrence	100	78	20	11	80.7
Quebec	114	89	21	10	82.0
Maritime Provinces (West)	122	82	32	8	80.3
Maritime Provinces (East)	122	92	25	5	85.6
Total	1262	916	255	91	82.7

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,

Director.

Meteorological Office, Toronto,

26th February, 1907.

DEPARTMENT OF MARINE AND FISHERIES, CANADA.

METEOROLOGICAL SERVICE.

Monthly Weather Review.

VOL. XXXI.

FEBRUARY, 1907.

No. 2.

INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

REMARKS UPON THE WEATHER.

The weather in British Columbia was exceedingly cold during the first six days, the temperature at night falling well below zero over the upper mainland. After the 6th it was much milder, but excepting in some districts on the lower mainland and islands the mean temperature was somewhat below the average. In most localities the precipitation was heavy, much of which over the mainland was snow and the depth on the ground was considerably more than usual at the end of the month. The chief precipitation occurred on the lower mainland and islands about the 5th to 8th, 12th and 18th to 28th. Over the upper land the dates were the 1st, 4th to 7th, 13th, 18th and 23rd to 25th. In Vancouver Island there was much dull weather but elsewhere bright sunshine exceeded the average.

The weather in the Western Provinces was exceedingly cold during the first five or six days after which it was quite mild up to the 19th. Comparatively low temperatures prevailed on the 20th and 21st, also from the 25th to 28th. From the 3rd to 18th there was much fine weather and in Saskatchewan the proportion of bright sunshine exceeded the average. The precipitation which was quite light occurred chiefly on or about the 1st and 25th, but at some places it was completely absent. By the end of the month the ground was bare in southern Alberta and elsewhere there was only a light covering.

In Manitoba the weather was cold during the first week, also from the 20th to 22nd and 25th to 28th the intervening periods being unusually mild. The precipitation which included rain at some places on the 22nd was quite light, falls occurring at most places on or about the 2nd, 11th and 22nd to 26th. Fine weather prevailed and the proportion of bright sunshine exceeded the average. The snow on the ground on the last day of the month was quite light.

In Ontario the weather was colder than usual, temperatures below zero occurring frequently throughout the month. On or about the 2nd, and from the 9th to 20th, the temperature occasionally rose above 32° at many places, but the nights were cold during this period. From the 3rd to 18th there was much fine weather and the proportion of bright sunshine for the month exceeded the average. The precipitation which was quite light and which included some rain occurred chiefly on or about the 2nd, 6th and 7th, 9th to 12th, 14th, 16th and 19th to 26th. Northeasterly winds were frequent and on the 2nd there was a heavy northwesterly gale. The depth of snow on the ground on the 28th diminished from about 24 inches in northern districts to about 6 inches in the southern portion of the province.

In the Province of Quebec the weather was unusually cold and stormy, temperatures well below zero occurring frequently throughout the month and the mean temperature being below the average. From the 1st to 6th, 10th to 21st and 24th to 27th light falls of snow occurred almost daily in western districts. In the eastern portion of the province the falls were much less frequent and the total precipitation of the month was everywhere comparatively light. On the 28th the depth of snow on the ground ranged from 30 to 60 inches.

The weather in New Brunswick was exceedingly cold and stormy and temperatures below zero at many places were of almost daily occurrence. From the 17th, however, it was comparatively mild, the temperature during the day rising between 30° and 40° in many districts; and on or about the 3rd and 21st similar temperatures were recorded. The precipitation which was mostly heavy in districts

of the season. The weather was generally cloudy and foggy, but bright sunshine did not depart much from the average. The depth of snow at the end of the month was from 30 to 60 inches in most districts.

In the West the weather was unusually stormy and cold, and in northern districts temperatures frequently recorded at many places on or about the 1st, 8th to 13th and 23rd to 26th and from the 14th to 18th, also on the 21st and 22nd, comparatively mild temperatures exceeding 40° were noted at some places upon several occasions. During the middle of the month there was much dull weather and precipitation was frequent from the 1st to the 6th, 13th, 18th to 22nd and 26th.

The weather on Prince Edward Island like that in the neighbouring provinces was exceedingly cold and a temperature slightly below zero was recorded on the 3rd at one station. Cloud and sunshine followed irregularly from the 1st to the 10th and from the 14th to 21st and 22nd to 24th, it was fine almost continuously. Precipitation included rain on the 3rd and 21st was recorded in most districts on or about the 1st, 2nd, 3rd, 6th, 14th to 21st and 26th. F. F. PAVSEN.

WINDS.

In British Columbia on Vancouver Island and over the Mainland the wind was mostly variable but favoured somewhat an easterly direction. Strong breezes occurred on four days, fresh on fourteen and there were two gales.

In Alberta and Saskatchewan the south and west directions predominated with twelve days with strong and eleven with fresh breezes and two gales.

In Manitoba the direction was variable favouring slightly the westerly with eight days with strong and nine with fresh breezes and four gales.

In the Lake Region the north and west directions were the most general with six days with strong and seven with fresh breezes and six gales.

In the Ottawa and Upper St. Lawrence Valleys the north and west directions were most in evidence with seven days with strong and seven with fresh breezes and five gales.

In the Lower St. Lawrence Valley and the Gulf the direction was mainly northerly to westerly with nine days with strong and nine with fresh breezes and four gales.

In the Maritime Provinces the direction was chiefly between the north and west with nine days with strong and seven with fresh breezes and seven gales.

In the Maritime Provinces where in many localities winter navigation is pursued, the gales occurred between the 2nd and 3rd, on the 5th between the 10th and 11th, on the 14th between the 18th and 19th, on the 21st between the 25th and 26th.

The gales were all warned but on several occasions the warnings were received late, some owing to delay in transmission and others again owing to delay in issue.

ATMOSPHERIC PRESSURE.

Subnormal values of the mean atmospheric pressure for February occurred throughout the Prairie Provinces, elsewhere in Canada they were in excess of the average.

The extremes of departure from normal were -0.10 of an inch at New Westminster, B. C., and -0.07 of an inch at Calgary, Medicine Hat, Alta., and Battleford, Sask.

HIGH AREAS.

During February the systems of high barometric pressure which traversed the Continent were as in January, of great intensity, the most important ones moving into the field of observation over the Yukon Territory, and thence passing southeastward to the Atlantic.

Eight systems of high pressure were charted, and in addition there were a few minor areas which were local to the Pacific slope.

Severe cold accompanied many of the systems during their passage over Canada.

LOW AREAS.

Fourteen areas of low pressure were sufficiently defined to admit of their paths being accurately traced. Five were first observed in the Yukon Territory and passed southeastward into the Lake Region; two traversed over the continent from the British Columbia coast; two first appeared on the United States Pacific coast; two in the Gulf of Mexico; two near the Bahama Islands and one apparently originated a little to the southward of the Lower Lake Region. Many of the areas were energetic and high winds and gales were more or less numerous in most portions of the Dominion, especially from the Lake Region to the Maritime Provinces.

TEMPERATURE.

West of Lake Superior the mean temperature of the month was above the average while east of it the mean was below the average. The largest positive departures, amounting to 7°, occurred in Saskatchewan, and the largest negative departures, also about 7°, occurred in Western Quebec and Southern New Brunswick. In the Western Provinces the extremes of temperature were pronounced, five days of extreme cold being followed by a fortnight of unseasonably mild weather which was in turn followed by moderately cold weather. From Ontario eastward the temperature was almost continuously below average.

The Highest and Lowest temperatures in each Province during February, 1904, were:

British Columbia,	65° +1 on 15th at Alberni,	43° -0 on 24th at Atlin.
Alberta,	63° -0 on 16th at Lethbridge,	- 58° -6 on 12nd at Alix.
Saskatchewan,	49° -0 on 16th at Prince Albert,	- 54° -0 on 14th at Moose Jaw.
Manitoba,	55° -0 on 15th at Fort Osborne,	- 46° -0 on 15th at Brandon.
Ontario,	48° -0 on 14th at Bloomfield,	- 54° -0 on 14th at White River.
Quebec,	40° -3 on 14th at Sherbrooke,	- 39° -0 on 23rd at Abitibi.
New Brunswick,	46° -2 on 15th at Grand Manan,	- 33° -0 on 24th at St. Stephen.
Nova Scotia,	52° -0 on 21st at Port Hastings,	- 22° -3 on 13th at Truro.
Prince Edward Island,	45° -0 on 22nd at Hamilton,	- 42° -0 on 23rd at Summerside.

PRECIPITATION.

In British Columbia the precipitation was above average in most localities, and was chiefly in the form of rain which at the lower levels soon cleared away the snow which lay on the ground early in the month. In the Western Provinces there was no rain and the snowfall was quite light. In Ontario there were many light snowfalls, and in the southwestern part of the Province a few showers, while in Quebec there were many snowfalls, some of which were heavy. In the Maritime Provinces the total precipitation was very generally in excess of the average with some rain, but it was for the most part snow which in a few instances was heavy.

DEPTH OF SNOW.

At the close of the month southwestern Alberta and the lower levels of Southern British Columbia were bare of snow while all other districts were covered.

In Quebec and New Brunswick the depth was considerable, ranging from 30 to 60 inches, but in Ontario and the Western Provinces a covering of less than 24 inches in northern districts lessened to a depth of a few inches in the more southern portions.

THICKNESS OF ICE.

Edmonton, 30 inches; Medicine Hat, 15 inches; Swift Current, 36 inches; Battleford, 30 inches; Minnedosa, 24 inches; Port Arthur, 22 inches; White River, 16½ inches; Saugeen, 44 inches; Port Stanley, 18 inches; Rockliffe, 25 inches; Ottawa, 30 inches; Chatham, 23½ inches; Charlottetown, 15 inches; Sydney, 24 inches; Toronto, 18 inches; Lakefield, 20 inches; Peterboro, 27 inches; Owen Sound, 15 inches; Lansdowne, 12 inches; Sutton West, 24 inches; Port Dover, 14 inches; Clinton, 10 inches; Gravenhurst, 24 inches; Meaford, 18 inches; Hamilton, 17 inches; Arden, 20 inches; Port Burwell, 18 inches; Fredericton, 27 inches.

BRIGHT SUNSHINE.

From Southern Saskatchewan to and including Ontario, the amount of Bright Sunshine recorded during February exceeded the normal; elsewhere in Canada, with local exceptions in British Columbia, the average was not reached. The extremes of departure from normal were +18% at Winnipeg, Man. and -5% at Montreal, Que. The possible amount of sunshine was recorded at Gravenhurst, Ont. on the 22nd, 24th and 25th; and at Montreal, Que. on the 22nd and 23rd.

[illegible]

PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c.,
DURING FEBRUARY, 1907.

RAINFALL					SNOWFALL					REMARKS
STATION.	Amount in inches	No. of Days, 01. or Over	No. of Fair Days	Heaviest Fall in Month	Date	Amount in inches	No. of Days	Heav- est Fall in Month	Date	
BRITISH COLUMBIA										
Couquiam ..	10.00	12	16	2.35	6					17th Fog.
Denman Island ..	5.31	7	20	1.45	23	8.0	1	8.0	1	Fog 9, 10, 11, 13, 19, 26
Goldstream Lake ..	6.61	15	10	2.68	7	7.0	3	3.0	1	
Hartley Bay ..	7.29	12	13	2.80	8	17.0	3	7.0	18	
Nanaimo ..	4.88	10	17	2.40	7	8.0	2	8.0	1, 2	
Nasas ..	8.67	6	15	2.20	11	24.0	5	14.0	7	
Somas River ..	6.32	13	14	1.83	24	9.3	1	9.3	5	
Victoria, W. Works ..	3.41	10	18	0.95	6	0.5	1	0.5	4	
ALBERTA—										
Bittern Lake ..			19			7.5	2	4.5	20	
Bismark ..			25			6.0	3	4.0	20	
Bruderheim ..			26			6.0	2	3.0	6, 19	
Beaver Hills, W. Coutts ..			24			3.8	1	2.0	19	Aurora 9, 10.
Conjuring Creek ..			24			6.0	1	2.5	5	
Clover Bar ..			24			9.0	3	5.5	19	
Doreplex ..			24			2.8	1	1.5	19	
Grassy Lake ..			26			8.0	2	8.0	18, 19	
Heather Brae ..			27			2.0	1	2.0	24	
Innisfail ..			25			1.8	3	1.2	18, 19	
Islay ..	0.00	1	25	0.00	8	2.7	3	2.2	19	
Josephburg ..			27							
Jumping Pound ..			26			5.0	2	3.0	5	
Lacombe ..			25			2.6	3	1.5	25	
Magrath ..	0.20	1	22			5.3	6	2.0	26	
Macleod ..			26			3.0	1	3.0	26	
Morinville ..			25			3.0	3	3.0	1	
Mayton ..			26			1.5	2	1.0	28	
Okotoks ..			26			3.0	2	3.0	19, 20	
Ponoka ..			27			1.0	1	1.0	26	
Saddle Lake ..			26			2.0	2	1.0	19	
Sion ..	0.32	1	24	0.32	8	0.3	2	0.3	22	
Stirling ..			26			6.0	3	2.0	20	
Vermilion ..			27			2.0	1	2.0	25	
Wabamun ..			26							
Wardo ..	0.05	2	21	0.03	8	11.1	5	5.1	18	
Wardo ..			24			2.4	1	1.1	20, 21	
SASKATCHEWAN—										
Elm How ..			25			4.0	3	2.0	1	
Insinger ..			26			5.0	2	5.0	1	
Last Mountain ..			27			2.0	1	2.0	1	
Regina ..			26			2.0	2	1.8	1	
MANITOBA—										
Cartwright ..			24			1.5	1	1.0	1	Aurora 6, 7, 9, 11, 13, 15, 20, 23.
Greta ..			26				2		9	
Norquay ..			25			3.0	3	1.0	1	
Rapid City ..			24			2.8	1	2.0	1	Aurora 6, 7, 8, 9, 12, 13.
ONTARIO—										
Arden ..	0.48	1	15	0.27	2	21.0	19	4.0	16	
Aurora ..	0.21	1	17	0.21	18	9.6	10	5.3	20	
Croydon ..			25			9.0	3	4.0	16	
Deer Park ..			21			7.7	7	3.5	21	
Emsdale ..			18			16.0	10	6.0	20	
Fulton ..			23			5.0	5	3.0	21	
Goderich ..	0.41	2	21	0.40	18	7.5	6	3.0	24	
Georgetown ..	0.16	2	9	0.15	19	8.1	20	2.0	20	
Huntsville ..			21			13.5	7	1.5	17	Aurora 11, 11.
Lausdowne ..			25			5.0	3	2.0	17	
Midland ..			29			2.0	10	10.0	14	
Montague ..	0.21	1	23	0.21	2	8.0	4	4.0	15	
MacNee ..			23			7.0	5	3.0	15	
Orangeville ..			19			5.1	9	2.2	21	
Princeton ..			7			12.0	7	5.0	21	
Parma ..	0.12	1	24	0.12	20	4.5	3	2.0	25	
Strathroy ..	0.15	1	18	0.50	2	13.0	6	1.0	14	
Sunnyside ..	0.70	1	24	0.70	2	4.0	3	2.0	15	
Sydenham ..	0.20	1	22	0.20	2	15.0	5	6.0	15	
Westport ..			21			11.6	7	3.5	16	
Warton ..	R.		15	R.	2	12.0	13	1.0	15	
Wyoming ..			26			1.0	2	3.0	20	
Westminster ..			24			8.0	1	3.0	20	
NEW BRUNSWICK—										
Point Escominae ..	0.50	2	11	0.50	23	28.9	15	9.2	25—26	

TABLE 1. — HOURS OF SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF FEBRUARY 1907.

	HOURS OF DAY.															
	12.00.	1.00.	2.00.	3.00.	4.00.	5.00.	6.00.	7.00.	8.00.	9.00.	10.00.	11.00.	12.00.	1.00.	2.00.	3.00.
Vancouver				0.04	0.19	0.24	0.28	0.34	0.39	0.44	0.43	0.29	0.19			
Nelson				0.07	0.19	0.19	0.27	0.27	0.30	0.33	0.42	0.39	0.06			
Kamloops				0.06	0.31	0.33	0.27	0.22	0.20	0.23	0.31	0.37	0.19			
Kootenai				0.06	0.11	0.23	0.29	0.29	0.29	0.34	0.29	0.07	0.04			
Edmonton				0.18	0.43	0.58	0.63	0.67	0.66	0.60	0.59	0.43	0.02			
Calgary																
Medicine Hat			0.09	0.31	0.46	0.56	0.62	0.63	0.63	0.57	0.46	0.29	8			
Edmonton				0.06	0.31	0.43	0.49	0.63	0.60	0.71	0.69	0.46	0.14			
Indian Head				0.06	0.33	0.60	0.64	0.63	0.68	0.68	0.66	0.59	0.03			
Brandon				0.08	0.34	0.67	0.79	0.73	0.69	0.63	0.62	0.50	0.19			
Winnipeg			0.04	0.41	0.60	0.82	0.89	0.81	0.76	0.78	0.75	0.59	0.18			
Woodstock				0.08	0.24	0.41	0.44	0.48	0.48	0.44	0.41	0.33	0.21			
Toronto				0.05	0.30	0.44	0.45	0.48	0.48	0.46	0.33	0.18	0.34	0.07		
Lindsay				0.16	0.33	0.44	0.41	0.42	0.46	0.48	0.50	0.33	0.47	0.21		
Barn			8	0.23	0.40	0.41	0.40	0.48	0.43	0.47	0.49	0.42	0.44			
Gravenhurst				0.18	0.43	0.48	0.47	0.44	0.43	0.48	0.48	0.51	0.43	0.16		
Haliburton			8	0.23	0.42	0.57	0.54	0.53	0.50	0.55	0.51	0.41	0.08			
Kingston			0.05	0.29	0.43	0.48	0.52	0.43	0.40	0.51	0.52	0.44	0.22			
Ottawa				0.17	0.39	0.44	0.53	0.60	0.47	0.45	0.46	0.45	0.20			
Montreal				0.06	0.22	0.37	0.40	0.43	0.50	0.45	0.45	0.29	0.06			
Sherbrooke			0.04	0.46	0.32	0.39	0.48	0.38	0.30	0.51	0.51	0.39	0.20	0.04		
Quebec				0.06	0.26	0.43	0.48	0.51	0.44	0.44	0.42	0.43	0.15			
Fredericton				0.19	0.39	0.56	0.50	0.38	0.33	0.59	0.52	0.43	0.31	0.02		
Charlottetown			0.04	0.43	0.35	0.44	0.49	0.52	0.49	0.52	0.44	0.46	0.39	0.03		

	Victoria	Nanaimo	Agassiz	Kamloops	Battleford	Medicine Hat	Edmonton	Indian Head	Brandon	Winnipeg	Woodstock	Toronto	Lindsay	Barns	Gravenhurst	Haliburton	Kingston	Ottawa	Montreal	Sherbrooke	Quebec	Fredericton	Charlottetown
Mean proportion for month <i>(Constant sunshine being 1)</i>	0.26	0.25	0.27	0.20	0.18	0.47	0.49	0.43	0.33	0.67	0.33	0.40	0.42	0.37	0.43	0.43	0.44	0.40	0.35	0.41	0.37	0.43	0.41
Difference from average	01	01	00	01	01	19	06	04	18	03	04	03	09	09	08	07	05	00	00	00	00	00	
Maximum daily amount	0.57	0.57	0.81	0.64	0.60	0.87	0.88	0.76	0.88	0.91	0.90	0.88	0.96	0.90	0.90	0.88	0.96	0.86	1.00	0.96	0.88	0.93	0.91
Date	19	13	16	13	13	28	23	14	6	29	27	22	27	27	22	17	22	23	23	26	4	7	28
No. of days clouded	9	10	3	10	2	5	4	4	4	2	10	6	10	8	7	11	8	8	11	6	8	9	8

end on 21.25

Aurora recorded :

Where the class of aurora is noted by the observer, it is given, (I) being the brightest, (IV) the feeblest in brilliancy.

2. Whitehorse, III : Banff, IV.
4. Whitehorse, II.
5. Whitehorse, II : Insinger, IV.
6. Gravenhurst, IV : Renfrew, IV : Ursa, Cottam, Calvin, Kenora, IV : Chaplin, IV : Alameda, Aweme, III : Georgetown, IV : Cartwright, III : Whitehorse, II : Insinger, IV : Grayhill, IV : Hillsdown, IV : Foxleigh.
7. Truro, II : Gravenhurst, II : Grand Manan, IV : Fredericton, I : Cottam, Birnam, IV : Beatrice, IV : Kenora, IV : Lucknow, III : Chaplin, IV : Cartwright, I : Rapid City, Paspébiac, II : St. Stephens, Insinger, IV : Alameda, IV : Moose Jaw, Hillsdown, IV : Minnedosa, III : Port Stanley, III : Southampton, IV : St. John, IV : Charlottetown, IV : Sydney, I : Qu'Appelle, IV : Foxleigh.
8. Cottam, Chaplin, IV : Aweme, I : Rapid City, Paspébiac, Chicoutimi, I : St. Stephen, Whitehorse, II : Big Creek, III : Insinger, III : Alameda, II : Waitfield, III : Gray Hills, IV : Swift Current, IV : St. John, IV : Banff, IV : Qu'Appelle, IV : Foxleigh.
9. Truro, I : Chaplin, I : Carberry, Aweme, I : Treherne, Point Esquimaux, III : Cartwright, II : Rapid City, Whitehorse, II : Insinger, I : Grenfell, I : Beaver Hills W., I : Threehills Creek, I : Waitfield, II : Gray Hill, IV : Edmonton, II : Minnedosa, I : Charlottetown, IV : Banff, III : Qu'Appelle, IV : Foxleigh.
10. Birnam, III : Macleod, III : Chaplin, IV : Whitehorse, III : Beaver Hills, IV : Waitfield, II : Gray Hill, IV : Winnipeg, III : Foxleigh.
11. Truro, III : Gravenhurst, I : Renfrew, IV : Grand Manan, IV : Madoe, I : Ursa, Brantford, IV : Barrie, III : Copper Cliff, Alton, II : Macleod, Chaplin, I : Aweme, II : Treherne, Emsdale, II : Georgetown, III : Huntsville, I : Cartwright, IV : Whitehorse, II : Insinger, III : Threehills Creek, IV : Waitfield, II : Gray Hill, Toronto, IV : White River, II : Foxleigh.
12. Sutton, W., Chaplin, I : Aweme, II : Whitehorse, II : Insinger, III : Waitfield, II : Gray Hill, IV : Minnedosa, III : Qu'Appelle, Foxleigh.
13. Chaplin, I : Aweme, III : Treherne, Cartwright, II : Whitehorse, III : Big Creek, Insinger, IV : Pakan, Waitfield, IV : Gray Hill, III : Banff, IV : Qu'Appelle, IV : Foxleigh.
14. Gravenhurst, II : Renfrew, III : St. Peters (Sask.), Bruce Mines, II : Copper Cliff, Alton, III : Haliburton, Almasippi, Chaplin, I : Aweme, IV : Georgetown, IV : Huntsville, III : Whitehorse, III : Threehills Creek, IV : Waitfield, II : Gray Hill, III : Edmonton, II : Swift Current, Minnedosa, I : Medicine Hat, I : Battleford, I : Banff, II : Qu'Appelle, Foxleigh.
15. Cottam, Kenora, II : Sutton, W., Chaplin, IV : Aweme, I : Cartwright, IV : Chicoutimi, Whitehorse, I : Insinger, IV : Threehills Creek, IV : Waitfield, IV : Swift Current, IV : Minnedosa, I : Battleford, III : Qu'Appelle, IV : Winnipeg, III : Foxleigh.
16. Chicoutimi, Whitehorse, III : Edmonton, IV : Minnedosa, I : Qu'Appelle, III : Foxleigh.
17. Chicoutimi, Whitehorse, I : Minnedosa, II.
18. Chicoutimi, Whitehorse, II.
19. Kenora, IV : Aweme, III : Whitehorse, I : Insinger, IV : Minnedosa, IV : Alton, IV.
19. Cartwright, IV : Whitehorse, Grenfell, II.
21. Cockburn Island, Whitehorse, Minnedosa, IV.
22. Conrad (*brilliant*), Edmonton, IV.
23. Cartwright, II : Whitehorse, I : Insinger, IV : Pakan, IV : Waitfield, III : Gray Hill, IV.
24. Whitehorse, II : Edmonton, IV : Minnedosa, III : Atlin, IV.
25. Whitehorse, II : Pakan, III.
26. Whitehorse, II.

FORECASTS FOR FEBRUARY, 1907.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are in force for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 1131. These were divided as follows:—

District.	No. Issued.	Verifications.			Per- centage.
		No. Fully.	No. Partly.	No. Not.	
Atlantic.	77	96	6	0	89.6
St. Lawrence.	77	96	8	3	96.9
Montreal.	77	99	5	3	92.8
Lake Superior.	80	67	14	0	86.3
Lake Lake, Superior.	102	78	19	5	80.8
Georgian Bay.	100	74	19	10	84.4
Ottawa Valley.	88	67	12	9	82.9
Upper St. Lawrence.	89	67	15	7	83.7
Lower St. Lawrence.	102	81	16	0	87.2
Quebec.	102	79	19	4	86.8
Maritime Provinces, West.	113	94	11	11	83.4
Maritime Provinces, East.	106	94	13	12	84.4
Total.	1131	866	146	79	86.4

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,
Director.

Meteorological Office, Toronto,)
27th March, 1907.)

DEPARTMENT OF MARINE AND FISHERIES, CANADA.

METEOROLOGICAL SERVICE.

Monthly Weather Review.

VOL. XXXI.

MARCH, 1907.

No. 3.

INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

REMARKS UPON THE WEATHER.

The weather in British Columbia was somewhat colder than usual and temperatures below the freezing point occurred almost every night over the upper mainland and quite frequently over the lower mainland and islands. During the first two or three days of the month dull weather prevailed over the Upper Mainland and Islands with occasional rain or snow after which it was mostly fair to the 19th when unsettled weather again set in and precipitation was somewhat frequent, excepting from the 23rd to 26th when it was fair. Over the Upper Mainland rain and snow occurred in most districts on or about the 2nd and 11th, also frequently from the 13th to 24th and 29th to 31st. The proportion of bright sunshine exceeded the average, but there was little growth during the month and vegetation was quite backward.

In the Western Provinces the weather, though frequently quite cold at night, was comparatively mild during day throughout the greater portion of the month. After the 18th temperatures between 40° and 50° were recorded upon several days at many places, the latter figure also being exceeded quite locally on or about the 22nd and 23rd. Dull weather with local falls of snow occurred on the 1st and 2nd, and quite fine weather was recorded from the 3rd to 8th; after which light falls of rain or snow were somewhat frequent and continued to the 11th. There was also falls of snow on or about the 18th, 24th and 31st. During the intervening periods there was much fine weather and the mean proportion of bright sunshine exceeded the average. On the 31st the snow had gone in southern Alberta, and elsewhere the ground was almost bare.

The weather in Manitoba, like that in Saskatchewan, though comparatively mild during the day was quite cold at night, the temperature frequently falling well below zero. From the 20th to 31st 40° was occasionally exceeded at many places. The precipitation, which included some rain on the 21st and 24th and which was recorded on or about the 1st, 4th, 6th, 11th, 11th to 18th, 21st and 24th to 27th was excessive. During the intervening periods the weather was mostly fair, and in the western portion of the province there was much bright sunshine. On the 31st the depth of snow on the ground varied between a mere trace and eight inches.

In Ontario the weather was unusually mild the temperature frequently rising above 40° at most places and occasionally above 60° at some stations after the 21st. From the 9th to 21st there was much fine weather but the mean proportion of bright sunshine was below the average. The precipitation which was heavy in south-western districts and in Muskoka, and which was accompanied during the last week by thunderstorms, occurred in most localities between the 1st and 6th, also on or about the 12th, 14th, 17th and occasionally during the last week. At the close of the month the ground was bare in the southwestern portion of the province, but in more northerly districts the ground was still well covered. Some signs of quickening vegetation were noticeable during last week.

The weather in the Province of Quebec was somewhat milder than usual excepting in the extreme eastern portion where on the contrary the mean temperature in most districts was slightly below the average. In the western portion of the Province the temperature occasionally rose above 40° after the 10th and 50° was exceeded during this period. During the first half of the month comparatively fine weather prevailed, but during the second half the sky was mostly overcast. The chief precipitation occurred on or about the 2nd, 5th, 9th and occasionally after the 14th. Rain was recorded at many

precipitation in the last week and this somewhat affected the snow upon the ground, nevertheless, the depth on the 31st at Quebec was twenty-five inches.

The weather in New Brunswick was quite cold during the first ten or eleven days, the temperature never really falling below zero. After the 11th temperatures above 32° were generally recorded, and 40° was also exceeded on several dates, more especially after the 21st. On the 29th and 30th between 50° and 55° was noted at some stations. Fine bright weather prevailed and the precipitation which occurred chiefly on or about the 2nd, 11th, 15th, 17th and 29th, was quite light in the aggregate. The depth of snow on the ground on the 31st varied between 24 inches in northern districts and 3 inches in the southern portion.

In Nova Scotia the weather was quite cold, and although it was comparatively mild during the day after the 12th when the temperature occasionally rose above 40°, the nights were generally cold. Dull weather prevailed, but the precipitation which was recorded on or about the 3rd, 15th, 16th, 17th, 20th and 28th, was in the aggregate considerably less than the average at most places. Several severe snowstorms were recorded, but on the 31st the ground was almost bare in southern districts.

The weather in Prince Edward Island was unusually cold and stormy during the first half of the month and the temperature fell below zero almost daily from the 1st to 6th. After the 15th milder weather prevailed, and there were several heavy falls of rain. Some exceedingly fine weather occurred between the 8th and 12th and 24th and 27th; and the precipitation which was deficient was recorded at most places on or about the 3rd, 6th, 13th, 17th, 20th, 23rd and 29th. At the close of the month the ground was almost bare.—F. F. PAYNE.

ATMOSPHERIC PRESSURE.

Subnormal values of the mean atmospheric pressure for March occurred from the Pacific Coast to and including New Ontario; elsewhere in Canada values were supernormal. The extremes of departure from normal were -0.19 of an inch at Battleford, Sask. and $+0.10$ of an inch at Yarmouth, N. S.

HIGH AREAS.

Twelve areas of high barometric pressure were charted during the month and the greater number exhibited as much energy as did the systems in February.

The general course of the areas was from the far north-western portion of the continent southeastward across the Lake Region to the Atlantic.

Eight systems moved into the field of observation in the Yukon Territory, two over the Middle Pacific States and two apparently developed over the Middle Rocky Mountain slope.

Some very severe cold periods were experienced in most districts during the passage of the more pronounced of the systems.

LOW AREAS.

Sixteen areas of low pressure were charted during the month, all but one first appearing either over the western or north-western portion of the continent. Three of the systems passed from the far northern Alaskan coasts southeastward into the Canadian western provinces and two others moved into the continent well to the northward on the British Columbian coast. Many of the areas were very energetic and widespread and not infrequently showed two or more foci. The great storm developments which so often occurred after the areas had left the Middle Atlantic or New England States as they passed either over or a little to the southward of the Maritime Provinces and thence across Newfoundland were quite remarkable, the type recurring with much persistency.

WINDS.

In British Columbia on Vancouver Island and over the mainland the direction was variable but slightly favouring the south and west with ten days with strong and ten with fresh breezes and two gales.

In Alberta and Saskatchewan the direction was variable with ten days with strong and twelve with fresh breezes and three gales.

In Manitoba the direction although more or less variable inclined somewhat to the north and west with six days with strong and twelve with fresh breezes and six gales the latter as a rule of a very moderate type.

In the Lake Region the westerly direction slightly predominated with twelve days with strong and seven with fresh breezes and six gales.

In the Ottawa and upper St. Lawrence valleys the south and west directions were most in evidence with thirteen days with strong and eight with fresh breezes and four gales.

In the Lower St. Lawrence Valley and the Gulf the direction although often variable favoured to a certain extent the north and west with eleven days with strong and eight with fresh breezes and four gales.

In the Maritime Provinces the direction was variable, the easterly being quite frequent, with five days with strong and sixteen with fresh breezes and five gales.

The gales in the Maritime Provinces occurred on the 2nd, 7th, 12th, 17th, and on the 20th, the latter being of great violence attended by a heavy snowfall. The storm on the 7th was likewise very severe in the eastern portions of Nova Scotia. Warnings were duly issued for the five storms, but a warning for a moderate storm issued on the 23rd was not subsequently justified by dangerous winds except very locally.

TEMPERATURE.

The temperature was below the average in British Columbia and the northern portion of Alberta, locally slightly below in Saskatchewan, average or a little below in eastern Quebec, and below the average in the Maritime Provinces. Elsewhere in the Dominion it was above the average. The chief negative departures occurred in the northern portions of British Columbia and Alberta and in Prince Edward Island and Cape Breton, and amounted to from 4 to 5 degrees. The most marked positive departures were, Manitoba from 4 to 5 degrees and the greater portion of Ontario from 4 to 8 degrees.

The Highest and Lowest temperatures in each Province during March, 1907, were:

British Columbia,	68° +1 on 9th at Alberni,	—24° +0 on 29th at Atlin.
Alberta,	64° +0 on 31st at Medicine Hat,	—23° +5 on 12th at Kneehill.
Saskatchewan,	54° +0 on 22nd at Lemberg,	—23° +4 on 1st at Lloydminster.
Manitoba,	50° +0 on 22nd at Oakdale Park,	—22° +0 on 5th at Carberry.
Ontario,	75° +0 on 22nd at Cottam,	—28° +0 on 1st at Rockliffe.
Quebec,	57° +0 on 28th at Brome,	—31° +0 on 4th at Abitibi.
New Brunswick,	56° +5 on 30th at St. Stephen,	—34° +0 on 1st at Woodstock.
Nova Scotia,	57° +0 on 31st at Wolfville,	—9° +0 on 5th at Parrsboro.
Prince Edward Island,	44° +5 on 29th at Charlottetown,	14° +0 on 5th at Summerside.

PRECIPITATION.

The precipitation was deficient throughout the greater portion of Canada. In Manitoba the amount recorded was generally in excess of the average, as was also the case in the Georgian Bay Region and New Ontario. In all the Provinces, except New Brunswick and Prince Edward Island, some local exceptions to the general conditions were noted.

DEPTH OF SNOW.

In the southern portions of British Columbia, the extreme south-western portion of the Maritime Provinces, and in the Peninsula of Ontario the ground was generally bare of snow at the close of the month, but over a large portion of the Dominion there was still a considerable covering. Cariboo reports as much as 68 inches on the lower levels and far greater depths on the mountains; Alberta, from a trace in southern localities to 9 inches in northern; Saskatchewan, from 4 to 10 inches; Manitoba, from a trace to 8 inches. The northern portions of Ontario from 2 to 9 inches. Quebec from 6 to over 24 inches, and the Maritime Provinces as much as 24 inches in northern districts.

THICKNESS OF ICE.

By the close of the month the ice had either broken up or become very rotten in many portions of Ontario, elsewhere it was reported as follows: Edmonton, Battleford and Swift Current, 30 inches; Medicine Hat, 8 inches; White River, 21 inches; Bruce Mines, 22 inches; Ottawa, 10 inches; Chatham, N.B., 22 inches; Sydney, 24 inches; Charlottetown, 15 inches.

BRIGHT SUNSHINE.

A supernormal value of the Bright Sunshine for March was recorded in British Columbia, Southern Saskatchewan, Manitoba and also locally in Eastern Ontario, elsewhere in Canada the amount registered was subnormal. The extremes of departure from average were +9% at Victoria, B.C. and Man., and —11% at Battleford, Sask.

The maximum daily amount was 97% on the 20th at Lindsay, Ont.

THE UNIVERSITY OF CHICAGO

Loc.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Albion	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Albion	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Albion	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities related to the business. It emphasizes the need for transparency and accountability in financial reporting.

2. The second part of the document outlines the various methods and techniques used to collect and analyze data. It includes a detailed description of the experimental setup and the procedures followed to ensure the reliability and validity of the results.

3. The third part of the document presents the results of the study, which show a significant correlation between the variables being investigated. The data indicates that the proposed method is effective in improving the efficiency and accuracy of the process.

4. The fourth part of the document discusses the implications of the findings and provides recommendations for future research. It suggests that further studies should be conducted to explore the long-term effects and potential applications of the proposed method.

5. The fifth part of the document concludes the study by summarizing the key findings and reiterating the importance of the research. It expresses the hope that the results will contribute to the advancement of the field and provide valuable insights for practitioners.

Figure 1. Schematic representation of the experimental design. The subjects were divided into two groups: the control group (CG) and the experimental group (EG). The CG was divided into two subgroups: the control group (CG) and the control group (CG). The EG was divided into two subgroups: the experimental group (EG) and the experimental group (EG). The subjects were divided into two groups: the control group (CG) and the experimental group (EG). The CG was divided into two subgroups: the control group (CG) and the control group (CG). The EG was divided into two subgroups: the experimental group (EG) and the experimental group (EG).

2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24
 25
 26
 27
 28
 29
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 40
 41
 42
 43
 44
 45
 46
 47
 48
 49
 50
 51
 52
 53
 54
 55
 56
 57
 58
 59
 60
 61
 62
 63
 64
 65
 66
 67
 68
 69
 70
 71
 72
 73
 74
 75
 76
 77
 78
 79
 80
 81
 82
 83
 84
 85
 86
 87
 88
 89
 90
 91
 92
 93
 94
 95
 96
 97
 98
 99
 100
 101
 102
 103
 104
 105
 106
 107
 108
 109
 110
 111
 112
 113
 114
 115
 116
 117
 118
 119
 120
 121
 122
 123
 124
 125
 126
 127
 128
 129
 130
 131
 132
 133
 134
 135
 136
 137
 138
 139
 140
 141
 142
 143
 144
 145
 146
 147
 148
 149
 150
 151
 152
 153
 154
 155
 156
 157
 158
 159
 160
 161
 162
 163
 164
 165
 166
 167
 168
 169
 170
 171
 172
 173
 174
 175
 176
 177
 178
 179
 180
 181
 182
 183
 184
 185
 186
 187
 188
 189
 190
 191
 192
 193
 194
 195
 196
 197
 198
 199
 200
 201
 202
 203
 204
 205
 206
 207
 208
 209
 210
 211
 212
 213
 214
 215
 216
 217
 218
 219
 220
 221
 222
 223
 224
 225
 226
 227
 228
 229
 230
 231
 232
 233
 234
 235
 236
 237
 238
 239
 240
 241
 242
 243
 244
 245
 246
 247
 248
 249
 250
 251
 252
 253
 254
 255
 256
 257
 258
 259
 260
 261
 262
 263
 264
 265
 266
 267
 268
 269
 270
 271
 272
 273
 274
 275
 276
 277
 278
 279
 280
 281
 282
 283
 284
 285
 286
 287
 288
 289
 290
 291
 292
 293
 294
 295
 296
 297
 298
 299
 300
 301
 302
 303
 304
 305
 306
 307
 308
 309
 310
 311
 312
 313
 314
 315
 316
 317
 318
 319
 320
 321
 322
 323
 324
 325
 326
 327
 328
 329
 330
 331
 332
 333
 334
 335
 336
 337
 338
 339
 340
 341
 342
 343
 344
 345
 346
 347
 348
 349
 350
 351
 352
 353
 354
 355
 356
 357
 358
 359
 360
 361
 362
 363
 364
 365
 366
 367
 368
 369
 370
 371
 372
 373
 374
 375
 376
 377
 378
 379
 380
 381
 382
 383
 384
 385
 386
 387
 388
 389
 390
 391
 392
 393
 394
 395
 396
 397
 398
 399
 400
 401
 402
 403
 404
 405
 406
 407
 408
 409
 410
 411
 412
 413
 414
 415
 416
 417
 418
 419
 420
 421
 422
 423
 424
 425
 426
 427
 428
 429
 430
 431
 432
 433
 434
 435
 436
 437
 438
 439
 440
 441
 442
 443
 444
 445
 446
 447
 448
 449
 450
 451
 452
 453
 454
 455
 456
 457
 458
 459
 460
 461
 462
 463
 464
 465
 466
 467
 468
 469
 470
 471
 472
 473
 474
 475
 476
 477
 478
 479
 480
 481
 482
 483
 484
 485
 486
 487
 488
 489
 490
 491
 492
 493
 494
 495
 496
 497
 498
 499
 500
 501
 502
 503
 504
 505
 506
 507
 508
 509
 510
 511
 512
 513
 514
 515
 516
 517
 518
 519
 520
 521
 522
 523
 524
 525
 526

14

[illegible]

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATION IN THE BOWEN OF CANADA, MARCH, 1907.

• *Stations not furnished with Postage*. Postage not included in rate of fare.

[illegible]

PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c., DURING MARCH, 1907.

STATION.	RAIN FALL				Date	SNOW FALL				REMARKS
	Amount in inches	No. of Days, 01. or Over	No. of Fair Days	Heaviest Fall in Month		Amount in inches	No. of Days, in March	Heaviest Fall in March	Date	
BRITISH COLUMBIA										
Cootnam	3.66	19	20	0.79	2	0.5	1	0.5	11	
Deuman Island	3.90	8	20	1.30	1		1		15	
Goldstream Lake	2.26	11	11	0.38	31	4.5	6	4.0	11	
Harley Bay	0.81	2	20	0.50	2	14.5	7	12.5	30	
Nasas Harbour	0.56	1	24	0.56	3	11.0	6	5.0	20	
Nanaimo	1.51	7	16	0.53	22					
Somas River	1.91	13	17	1.00	23	5.5				
Royal Oak	1.76	8	22	0.80	11	0.5	1	0.5	11	
ALBERTA —										
Condit						9.0	5	5.0	10	
Bardo						2.5	3	2.0	11	
Beaver Hills, W.						4.8	8	3.0	15	
Bismark						3.5	2	3.0	15	
Bruderheim						3.0	2	2.5	15	
Buttern Lake						7.0	2	5.0	15	20th, 24
Clover Bar						5.0	3	4.0	16	
Conjuring Creek						6.2	3	4.5	15	25th, below zero.
Heather Brae						8.7	7	4.8	15	30th, 10
Islay						2.5	4	1.2	16	
Innisfail						0.0	6	2.0	10	
Josephburg						10.0	5	5.0	26	
Jumping Pound						5.7	11	2.1	31	
Lacombe						1.5	5	1.0	15	
Macleod	0.19	1	20	0.19	18	12.0	8	3.0	7	28
Magrath						13.0	7	5.0	28	Ground frozen to depth of 4 ft.
Mayton						7.0	2	4.0	8	
Morinville						1.3	2	0.5	13	
Okotoks						10.8	11	2.8	1	
Ponoka						6.9	6	3.0	18	
Sion						10.0	8	4.0	15	Slight hail on 31st.
Stirling						8.0	3	3.0	11	25
Saddle Lake						4.0	3	4.0	15	
Vermilion						3.0	4	1.0	16	17
Wabamun						7.4	8	3.5	15	
Dorelee						7.0	4	2.8	15	
Grassy Lake						3.5	2	3.0	2	
SASKATCHEWAN—										
Elm How						6.5	3	3.0	18	
Insinger						11.5	4	5.0	18	21
Regina	0.2	1	20	0.02	21	4.0	6	3.0	18	Fog on 22nd. Fog on 5th.
Last Mountain						1.5	1	1.5	24	
MANITOBA—										
Cartwright						13.5	5	5.0	18	26
Gretna	0.28	2	22	0.18	21	3.0	4	4.5	11	Fog on 21st.
Norquay						10.0	5	6.0	26	
Rapid City	0.21	1	20	0.21	21	11.8	8	5.2	27	Blizzard on 18th.
ONTARIO —										
Aurora	1.11	7	18	0.31	26	5.0	4	3.1	5	Thunder on 25, 26, 27.
Arden	1.74	9	19	0.72	2	4.0	4	4.0	1	Thunder on 21, 28.
Croydon	1.76	6	24	0.70	25	1.0	1	1.0	31	Thunder on 25, 26.
Deer Park	1.35	7	22	0.47	27	2.5	2	2.5	5	Thunder on 25, 26, 27.
Dutton	1.33	3	24	0.52	27	7.0	2	5.0	19	Thunder on 25, 27.
Emsdale	2.02	8	19	0.49	25	8.5	4	4.5	3	Fog on 27. Thunder on 23, 27.
Goderich	1.74	6	22	0.60	1	2.0	3	1.0	7	
Georgetown	2.21	9	10	0.55	26	2.6	13	0.9	5	Fog on 1, 12, 19, 25, 27. Thunder on 23, 24, 26, 27.
Huntsville	2.23	6	19	1.01	21	10.5	7	3.5	2	Thunder on 23.
Lansdowne	1.39	3	19	0.80	2					Thunder on 23, 28, 29.
MacNe	1.65	1	27	1.00	21					
Midland		No record kept.				6.5	2	3.5	5	Thunder on 23, 24, 27.
Montague	0.38	3	27	0.16	23	4.0	2	4.0	19	10th, ice 2 1/2 ft. thick on river.
Orangeville	2.69	5	24	0.69	27	2.3	2	1.2	6	Thunder on 26, 27.
Parma	2.57	6	24	0.70	25	0.5	1	0.5	15	
Princeton	2.85	3	23	1.41	26	8.5	4	3.0	19	Thunder on 24.
Sydenham	2.44	5	26	0.91	2					
Strathroy	2.42	12	16	0.78	2	9.0	4	4.0	7	19
Wyoming	0.80	5	23	0.30	12-27	5.0	3	3.0	8	Thunder on 27.
Watford	1.18	4	27	0.52	1					
Westport	0.25	1	24	0.25	29	5.3	5	2.0	19	21
Wooler	1.11	6	22	0.37	2-27	1.0	3	1.0	5	Thunder on 24, 27, 29. Thunder on 23. Fog on 13, 25.
Westminster	1.33	3	22	0.18	12	7.5	5	3.0	19	Thunder on 26.
Warton	2.49	6	18	0.96	23		7			Thunder on 23, 26. Fog on 28.
QUEBEC —										
Gaspe	0.41	3	22	0.30	21	24.0	6	8.0	12	Thunder on 26.
NEW BRUNSWICK —										
Point Escominae	0.13	1	23	0.4	17-28	27.4	3	18.1	20	20th, worst winter storm ever recorded.

(C) HOURS REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF MARCH 1907

LOCATION	HOURS REGISTERED															
	1 a.m.	2	3	4	5	6	7	8	9	10	11 a.m.	12	1 p.m.	2	3	4 p.m.
Victoria	0.02	0.22	0.41	0.57	0.71	0.86	0.94	1.00	0.96	0.80	0.56	0.33	0.13	0.03	0.00	0.00
Nanaimo	0.03	0.22	0.41	0.56	0.71	0.86	0.94	1.00	0.96	0.80	0.56	0.33	0.13	0.03	0.00	0.00
Vancouver		0.13	0.34	0.49	0.63	0.77	0.87	0.93	0.97	0.98	0.88	0.67	0.46	0.26	0.10	0.00
Port Moody	0.04	0.21	0.42	0.47	0.56	0.65	0.73	0.80	0.86	0.91	0.93	0.86	0.70	0.48	0.32	0.00
Port Alberni		0.09	0.32	0.49	0.54	0.58	0.66	0.73	0.79	0.83	0.83	0.71	0.52	0.31	0.02	0.00
Port Hardy	0.01	0.30	0.43	0.07	0.09	0.73	0.69	0.63	0.57	0.50	0.46	0.43	0.17	0.02	0.00	0.00
Halifax	0.01	0.28	0.43	0.60	0.79	0.74	0.71	0.68	0.68	0.68	0.68	0.62	0.43	0.09	0.00	0.00
Winnipeg	0.04	0.18	0.23	0.31	0.40	0.46	0.52	0.57	0.61	0.63	0.67	0.69	0.26	0.03	0.00	0.00
Windsor	0.03	0.23	0.32	0.43	0.73	0.79	0.74	0.69	0.67	0.61	0.48	0.12	0.00	0.00	0.00	0.00
London	0.08	0.38	0.62	0.62	0.65	0.68	0.73	0.73	0.62	0.57	0.33	0.21	0.00	0.00	0.00	0.00
Quebec	0.00	0.16	0.32	0.37	0.32	0.32	0.29	0.26	0.30	0.25	0.21	0.02	0.00	0.00	0.00	0.00
Montreal		0.13	0.33	0.41	0.36	0.26	0.13	0.00	0.16	0.31	0.37	0.10	0.00	0.00	0.00	0.00
Shelburne	0.08	0.18	0.28	0.40	0.47	0.50	0.44	0.34	0.44	0.37	0.31	0.27	0.02	0.00	0.00	0.00
Thunder Bay	0.04	0.26	0.38	0.43	0.49	0.52	0.49	0.39	0.38	0.41	0.40	0.04	0.00	0.00	0.00	0.00
Gravelly Bay																
Hay Valley	0.04	0.22	0.41	0.46	0.51	0.51	0.43	0.33	0.37	0.40	0.33	0.03	0.00	0.00	0.00	0.00
Kingston	0.11	0.36	0.43	0.51	0.56	0.52	0.48	0.43	0.44	0.43	0.29	0.06	0.00	0.00	0.00	0.00
Ottawa	0.05	0.33	0.43	0.50	0.46	0.48	0.43	0.37	0.52	0.48	0.38	0.04	0.00	0.00	0.00	0.00
Montreal	0.07	0.30	0.43	0.44	0.49	0.49	0.52	0.43	0.45	0.37	0.18	0.00	0.00	0.00	0.00	0.00
Shelburne	0.04	0.20	0.44	0.50	0.58	0.56	0.43	0.49	0.51	0.45	0.36	0.12	0.00	0.00	0.00	0.00
Quebec	0.03	0.32	0.50	0.43	0.49	0.49	0.43	0.34	0.51	0.48	0.43	0.04	0.00	0.00	0.00	0.00
Fredericton	0.08	0.38	0.43	0.50	0.53	0.53	0.43	0.33	0.63	0.60	0.49	0.24	0.00	0.00	0.00	0.00
Charlottetown	0.04	0.29	0.33	0.46	0.53	0.53	0.43	0.34	0.52	0.45	0.33	0.04	0.00	0.00	0.00	0.00

	Victoria	Nanaimo	Vancouver	Port Moody	Port Alberni	Battleford, Saskatchewan	Medicine Hat, Alberta	Edmonton	Indian Head, Saskatchewan	Brandon, Manitoba	Winnipeg, Manitoba	Woodstock, Ontario	Toronto	London	Paris	Gravelly Bay, Quebec	Halifax, Nova Scotia	Kingston, Ontario	Ottawa, Ontario	Montreal, Quebec	Shelburne, Ontario	Quebec	Fredericton, New Brunswick	Charlottetown, Prince Edward Island
Mean temperature (avg. for month)	47.0	42.0	42.7	43.0	43.0	35.0	33.0	29.4	29.1	30.2	30.3	30.2	30.3	30.3	30.3	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Constant sun- shine hours	160	120	125	130	130	100	90	70	65	75	80	85	90	95	100	100	100	100	100	100	100	100	100	100
Difference from average	0.00	-0.07	0.02	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum day variation	0.87	0.94	0.80	0.80	0.80	0.72	0.63	0.87	0.86	0.86	0.92	0.88	0.88	0.97	0.88	0.93	0.92	0.87	0.93	0.94	0.94	0.94	0.94	0.94
Date	9	6	4	6	4	1	1	3	20	30	9	6	6	6	20	6	6	20	6	10	20	9	7	7
No. of days clouded	3	4	12	3	3	6	1	4	6	5	3	10	3	7	6	6	6	6	6	8	5	6	6	4

Aurora recorded :

Where the class of aurora is noted by the observer, it is given, I being the brightest, & IV the feeblest in brilliancy.

5. Treherne, Chaplin, Gray Hill, IV.
6. Gray Hill, IV.
7. Paspebiae, IV ; Treherne, Waitfield, IV ; Macleod, III ; Cape Norman, III.
8. St. Albans, III ; Estevan, Nicola.
9. Paspebiae, II ; Haliburton, Ursa, Birnam, IV ; Cockburn Island, II ; Bruce Mines, IV ; Lake Talon, North Bruce, St. Albans, I ; Treherne, Estevan, St. Peters, IV ; Gray Hill, III ; Pagan, III ; Waitfield, II ; Threehills Creek, IV ; Kneehill, Princeton, B.C., Big Creek, III ; Insinger, IV ; Cartwright, IV ; Emsdale, III ; Huntsville, III.
10. Chicoutimi, Paspebiae, IV ; Ursa, Madoc, III ; Birnam, III ; Clinton, III ; Bruce Mines, IV ; Lake Talon, Lucknow, North Bruce, Alameda, IV ; Chaplin, Threehills Creek, IV ; Salmon Arm, Nicola, Emsdale, I ; Georgetown, IV ; Huntsville, II ; Cape Norman, II.
11. Chicoutimi, Paspebiae, IV ; Cape Magdalen, Haliburton, Madoc, IV ; Savonas, I (very fine) ; Lake Talon, Lucknow, St. Albans, I ; Alameda, IV ; Gray Hill, II ; Hillsdown, III ; Pagan, III ; Waitfield, III ; Threehills Creek, I ; Kneehill, Tzouhalem, Salmon Arm, Quessnelle, Princeton, B.C., Big Creek, II ; Ladner, Nelson, Hedley, Alberni, IV ; Bella Coola, IV ; Denman Island, Cartwright, II ; Emsdale III ; Georgetown, IV ; Huntsville, II ; Cape Norman, II.
12. Chicoutimi, Paspebiae, IV ; Sutton West, Oakdale Park (fine), St. Albans, IV ; Spences Bridge, Ladner, Insinger, IV.
13. Ladner.
15. Chaplin, IV ; Gray Hill, III.
16. Gray Hill, III ; Waitfield, III ; Cape Norman, II.
19. Gray Hill, IV.
20. Waitfield, II.
21. Chaplin, IV ; Gray Hill, II ; Waitfield, IV.
22. Pagan, III ; Cape Norman, II.
24. Waitfield, II.
26. Hillsdown, IV.

Thunder recorded on :

21. Oakbank, Oakdale Park.
23. Brome, Haliburton, Lakefield, Madoc, Peterboro', Brantford, Birnam, Uplands, Orillia, Cockburn Island, Clinton, Bruce Mines, Meaford, Lucknow, Owen Sound, Deer Park, Emsdale, Georgetown, Huntsville, Lansdowne, Midland, Strathroy, Wooler, Wiarton.
24. Beatrice, Lakefield, Ursa, Madoc, Paris, East Toronto, Sutton West, Arden, Georgetown, Midland, Princeton, Westport.
25. Haliburton, Cockburn Island, Bruce Mines, Meaford, Aurora, Croydon, Dutton, Strathroy.
26. Alton, Beatrice, Ursa, Port Dover, Port Burwell, Paris, Hamilton, Brantford, Birnam, Agincourt, Port Hope, East Toronto, Sutton West, Barrie, Cockburn Island, Clinton, Bruce Mines, Meaford, Lucknow, Copper Cliff, Owen Sound, Aurora, Croydon, Deer Park, Georgetown, Orangeville, Strathroy, Westminster, Wiarton, Gaspé.
27. Brome, Abitibi, Haliburton, Ursa, Madoc, Peterboro', Port Burwell, Hamilton, Brantford, Agincourt, East Toronto, Sutton West, Lucknow, Aurora, Deer Park, Dutton, Emsdale, Georgetown, Midland, Orangeville, Wyoming, Westport.
28. Brome, Chicoutimi, Cape Chatte, Beatrice, Madoc, Port Burwell, Port Hope, Arden, Lansdowne.
29. Abitibi, Lansdowne, Westport.

FORECASTS FOR MARCH, 1907.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are in force 24 hours beginning at 8 a.m. the following day.

The number of forecasts issued during the month was 1117. These were divided as follows :

District.	No.		Verification.		
	Fully	Partly	No.	No.	Perc.
Albany	5	6	11	0	80.4
Albany & Adirondack	8	0	19	0	84.4
Montreal	54	6	44	6	81.3
Quebec & Saguenay	50	6	46	0	82.0
St. John's & P.E.I.	24	72	46	6	80.4
St. John's & P.E.I.	24	71	48	0	85.4
Ontario Valley	55	21	48	9	81.6
Upper St. Lawrence	98	7	48	7	83.7
Lower St. Lawrence	80	0	40	0	81.5
Great Lakes	22	71	13	8	84.2
Maritime Provinces, West	126	22	23	10	82.8
Maritime Provinces, East	125	88	30	7	82.4
Total	1117	80	241	84	84.7

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STEPART,

Director.

Meteorological Office, Toronto,

26th April, 1907.

DEPARTMENT OF MARINE AND FISHERIES, CANADA.

METEOROLOGICAL SERVICE.

Monthly Weather Review.

VOL. XXXI.

APRIL, 1907.

No. 4.

INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

REMARKS UPON THE WEATHER.

The weather over the lower mainland and islands of British Columbia was quite cool and unsettled during the first ten or twelve days and light frosts occurred at a few places in northern districts. Somewhat milder weather then set in and continued to the end of the month, the last nine or ten days being comparatively warm. Much rain occurred during the unsettled period mentioned, also on or about the 16th, but after the 10th the weather was mostly fine and the mean proportion of bright sunshine exceeded the average. Vegetation was somewhat backward on the 30th. Over the upper mainland the weather conditions were almost similar to those in districts to the westward, it being cold and unsettled during the first nine or ten days, but frosts at night were more frequent and the precipitation over the higher levels of the mountains was chiefly snow.

In the Western Provinces the chief characteristic of the weather was the low temperature which prevailed, it being quite phenomenal in the Province of Saskatchewan. On or about the 16th and 19th, temperatures below zero were recorded at some places in this province. From the 2nd to 4th, the weather was mostly cloudy and there were falls of snow, after which much bright sunshine was recorded up to the 14th. On the latter date the weather again became unsettled and snow was recorded occasionally at many places up to the 18th. From this time onward the weather was mostly fine. On the 30th, vegetation was exceedingly backward.

The weather in Manitoba, like that in Saskatchewan, was phenomenally cold and high winds were also of frequent occurrence. From the 3rd to 6th, 10th to 16th, and 24th to 29th, snow occurred almost daily at most places; and although there was much fine weather during the intervening periods the proportion of bright sunshine was below the average, excepting at Winnipeg where, on the contrary, it was slightly above. Sleighing was possible in many districts until quite late in the month, and on the 30th vegetation was exceedingly backward.

In Ontario the weather was characterised by unusually low temperatures, frosts occurring almost every night. On or about the 20th and after this date, 50° was occasionally exceeded during the day, and during the last three days between 60° and 70° was recorded at some stations. The precipitation which at most places included snow, and which was excessive in most districts, occurred chiefly on or about the 4th, also occasionally from the 7th to 16th, and on the 25th and 30th. Fine weather was recorded during the first two or three days, also from the 18th to 24th; and it was occasionally fine on other dates, but the mean proportion of bright sunshine was below the average generally. In northern districts much snow still remained on the ground at the end of the month, and vegetation throughout the Province was quite backward.

In the Province of Quebec the weather was somewhat colder than usual in the eastern portion of the Province and quite cold in western districts. After the 20th, milder conditions prevailed, and in western counties the temperature occasionally exceeded 50°. North-easterly gales accompanied by snow were recorded on the 5th and 9th, snow or rain also occurring at most places on or about the 1st, 2nd, 24th, 25th, 26th and 30th. On the last day of the month much snow still remained in the woods, and up to a late date the ground was also frozen which retarded vegetation considerably.

The weather in New Brunswick though cold during the first half of the month was comparatively mild during the second half and the mean temperature did not depart much from the normal. The precipitation which was generally excessive, and which included some snow, occurred chiefly on or about the 2nd, 6th, 9th, 14th, 24th and 26th. During the intervening periods there was much bright sunshine. High winds were somewhat frequent. Some snow still remained in the woods at the end of the month and vegetation had made little progress.

In Nova Scotia changes of temperature were somewhat frequent and rapid, but after the 15th, the weather was comparatively mild, and the mean temperature of the month was not much below the average. Dull weather generally prevailed, but from the 15th to 23rd there was much bright sunshine. Precipitation, though deficient in the aggregate, was of frequent occurrence, the chief falls being recorded about the 1st to 3rd, 6th, 9th to 15th, 21st and 24th to 27th. The falls on the first three days were snow at most places, and snow was also recorded on the 9th in some districts. Fresh to strong winds were almost continuous. The condition of vegetation was normal.

In Prince Edward Island the weather was exceedingly dull and slightly colder than usual. After the 17th, temperatures exceeding 40° were general, but the nights were comparatively cold. The precipitation, which included much snow, occurred in most districts on or about the 2nd, 3rd, 6th, 10th, 14th, 15th, 20th, and from the 25th to 27th, but the falls in most instances were light, and the total quantity for the month was less than the average. Vegetation was somewhat backward. F. F. FAYST.

ATMOSPHERIC PRESSURE.

From Lake Superior westward to the Pacific values of the mean atmospheric pressure for April were supernormal, departures increasing inwards to Southern Saskatchewan to a maximum of +0.10 of an inch at Swift Current, Sask. Subnormal values were registered elsewhere in Canada with the deficiencies increasing eastward from Lake Superior reaching - 0.12 of an inch at Grand Manan, N.B. and Halifax, N.S.

HIGH AREAS.

Seven areas of high pressure were charted during the month, four first appeared in the neighbourhood of the Yukon Territory: two in Northern Saskatchewan and one off Vancouver Island. The systems were for the most part energetic and unusually so for so late in the season and they were invariably accompanied by very low temperature conditions.

LOW AREAS.

Fifteen areas of low pressure were charted during the month, seven first appearing in the north-western portion of the continent: five in the western portion: one in the Gulf of Mexico off the coast of Texas and two off the United States Atlantic seaboard. A number of the areas were energetic, more so than is usually the case so late in the season, several also developed greatly as they passed off the Atlantic coast and approached Newfoundland, a continuance of the type which was so pronounced during the preceding month.

WINDS.

In British Columbia on Vancouver Island and over the mainland the direction was variable with six days with strong and nine with fresh breezes and three gales.

In Alberta and Saskatchewan the north and west directions predominated with eight days with strong and fifteen with fresh breezes and three gales.

In Manitoba the direction was chiefly northerly to westerly with eleven days with strong and five with fresh breezes and three gales.

In the Lake Region the north and west directions were the most general with twelve days with strong and eight with fresh breezes and three gales, the latter occurring on the 7th, between the 8th and 10th, and on the 16th.

In the Ottawa and Upper St. Lawrence Valleys the direction favoured the northeast and west with ten days with strong and nine with fresh breezes and two gales.

In the Lower St. Lawrence Valley and Gulf the direction was almost entirely northeasterly to northwesterly with six days with strong and eleven with fresh breezes and five gales, the latter occurring between the 5th and 6th, between the 9th and 10th, on the 11th, the 20th, and on the 24th.

In the Maritime Provinces the direction was mainly northeasterly to northwesterly with eight days with strong and ten with fresh breezes and four gales, the latter occurring on the 6th between the 9th and 10th, between the 13th and 14th, and between the 24th and 25th.

The gales were for the most part satisfactorily warned, but owing to the unusually late season navigation in several districts had hardly begun even by the close of the month.

TEMPERATURE.

The mean temperature of April was subnormal throughout Canada except in British Columbia and Alberta where locally the average was exceeded.

A negative departure of 17.2° was recorded at Chaplin, Sask., and very pronounced deficiencies were general in the Prairie Provinces and over a large portion of Ontario.

The Highest and Lowest temperatures in each Province during March, 1907, were :

British Columbia,	79° .5 on 20th at Spence's Bridge — 2° .5 on 1st at Atlin.
Alberta,	69° .9 on 21st at Lethbridge, — 7° .0 on 28th at Pekisko.
Saskatchewan,	54° .0 on 30th at Swift Current, — 7° .0 on 15th at Chaplin.
Manitoba,	60° .0 on 30th at Fort Osborne, — 4° .7 on 13th at Minnedosa.
Ontario,	75° .0 on 29th at Chatham and Welland, — 30° .0 on 1st at White River.
Quebec,	67° .0 on 29th at Brome, 6° .0 on 7th at Clarke City.
New Brunswick,	67° .0 on 30th at Moncton, 2° .0 on 8th at Chatham.
Nova Scotia,	75° .0 on 30th at Wolfville, 10° .4 on 8th at Truro.
Prince Edward Island,	60° .0 on 29th at Summerside, Hamilton and Charlottetown, 9° .0 on 7th at Summerside.

PRECIPITATION.

The precipitation in British Columbia did not differ much from the average, being slightly in excess of it in some districts and not quite equal to it in others. In the Western Provinces, at Calgary and in the immediate neighbourhood, it was more than twice the average amount. At Swift Current, also, the normal was slightly exceeded, otherwise nearly everywhere else a deficit occurred. In Ontario it was exceeded in the Georgian Bay region but only locally in other districts, many localities recording a negative departure. In Quebec and New Brunswick it was above the average, whereas in Nova Scotia and Prince Edward Island it was very generally below the normal.

BRIGHT SUNSHINE.

The amount of bright sunshine recorded during April was supernormal in British Columbia, Southern Saskatchewan, Eastern Manitoba and in the Maritime Provinces; elsewhere in Canada sub-normal values were registered. The maximum daily amount, 97%, was recorded at Montreal, Que., on the 11th.

The extremes of departure from normal were $+23\%$ at Agassiz, B.C., and -15% at Battleford Sask.

[illegible]

ONTARIO—Concluded.

ONTARIO—Continued.

Stratford	119	36.3	4.9	11.67	0	25	12.6	116.7	79	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	0
Stony Creek	232	36.6	0.0	31.69	0	25	12.6	218.2	218.2	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	0
Woodsbrook	980	38.8	1.1	21.55	6	29	17.6	217.9	217.9	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	0
Windsor	577	38.3	7.2	32.71	0	30	18.0	215.7	215.7	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	0
Waldenburg	625	39.2	2.2	32.71	0	30	18.0	215.7	215.7	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	0
Windsor	590	38.2	6.6	12.69	5	30	16.0	215.4	215.4	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	0
Windsor	590	38.2	6.6	12.69	5	30	16.0	215.4	215.4	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	0
Windsor	590	38.2	6.6	12.69	5	30	16.0	215.4	215.4	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	0
Windsor	590	38.2	6.6	12.69	5	30	16.0	215.4	215.4	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	0
Windsor	590	38.2	6.6	12.69	5	30	16.0	215.4	215.4	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	0
Windsor	590	38.2	6.6	12.69	5	30	16.0	215.4	215.4	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	0
Windsor	590	38.2	6.6	12.69	5	30	16.0	215.4	215.4	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	0
Windsor	590	38.2	6.6	12.69	5	30	16.0	215.4	215.4	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	0
Windsor	590	38.2	6.6	12.69	5	30	16.0	215.4	215.4	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	0
Windsor	590	38.2	6.6	12.69	5	30	16.0	215.4	215.4	6	8	19	18	19	19	5	31	23	15	8	180	12.3	21	21.8	2.38	1.20	8.2	0	0	

New Book

Bathurst	40	39	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0</
----------	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-----

PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c.,
DURING APRIL, 1907.

STATION.	RAINFALL				Date	SNOWFALL				REMARKS
	Amount in inches	No. of Days, 70, or Over	No. of Fair Days	Heaviest fall in Month		Amount in inches	No. of Days	Heaviest fall in Month	Date	
BRITISH COLUMBIA—	in.			in.		in.		in.		
Denman Island	0.30	5	25	2.60	8					Gales 3rd, 7th, 8th.
Goldstream Lake	0.46	14	16	1.52	5					
Hartley Bay	0.19	14	11	0.85	19	0.5	1	0.5	1	Thunder 2nd.
Nanaimo	2.91	4	22	1.14	9					
Nasas Harbour	2.41	7	22	1.47	19					
Sumas River	7.04	9	21	1.96	9					
Royal Oak	1.80	9	21	0.55	5					
ALBERTA—										
Bruderheim	0.21	3	25	0.44	18	2.5	2	1.5	2	
Bittern Lake						4.5	4	2.0	1	1 below zero on 26th & 27th.
Bardo						1.5	3	1.0	17	
Beaver Hills, W						3.9	4	1.5	3	
Bismark						0.8	1	0.8	2	
Coots						13.0	7	3.0	7, 23	
Conjuring Creek	R	0	26	R	8		3		9, 17, 25	
Clover Bar										
Dorence						4.0	3	2.0	2	
Grassy Lake	0.25	1	27	0.25	10	1.5	3	0.5	10, 17, 27	
Heather Brae						10.0	5	6.5	14	
Innisfail	0.05	1	24	0.05	21	4.0	5	3.0	16	
Islay						1.8	4	0.5		
Josephburg	0.03	1	21	0.03	23	6.0	1	2.0	17	
Jumping Pound	0.75	6	20	0.41	23		7			
Lacombe										
Magrath	1.00	1	26	1.00	22	7.0	3	5.0	23	Ground frozen 4 ft.
Macleod	0.33	1	25	0.33	23	30.0	4	18.0	2, 6, 27	
Mayton						7.0	2	7.0	16, 17	
Mortville						3.8	3	1.0		
Okotoks						8.5	6	1.5	22, 23	
Ponoka							3			
Saddle Lake							1		2	
Sion						3.2	3	2.2	17	
Stirling	R	—	26	R	22	9.0	3	6.0	25, 6, 7	
Vernilion						2.8	3	2.0	25	
Wabamun	0.02	1	23	0.02	10	4.2	6	2.8	17	
SASKATCHEWAN—										
Elm How						8.0	3	6.0	3	
Insinger						10.0	5	4.0	3	Aurora on 3, 5, 13, 15, 16, 18
Last Mountain						2.0	6	1.0	3	
Regina						8.5	11	3.0	5	
MANITOBA—										
Cartwright						12.8	7	4.0	3	
Greta						12.5	6	3.0	16	
Norquay						15.5	01	3.0	1	1 on 16th.
Rapid City	0.05	2	20	0.05	28	4.8	4	2.0	3	
ONTARIO—										
Arden	1.83	10	18	0.72	30	7.0	4	3.0	8	Thunder 30th.
Aurora	2.24	7	19	1.39	30	0.6	3	0.6	15	Thunder 29th.
Croydon	1.55	2	25	0.80	25	5.0	3	3.0	8	Thunder 30th.
Dutton	1.75	3	26	1.06	30	*	1	*	—	
Deer Park	1.81	7	23	0.77	30	*	1	*	—	
Ennismore	0.60	2	24	0.50	30	9.0	4	4.0	16	Thunder on 30th.
Emsdale	2.34	7	19	0.87	30	6.0	4	6.0	25	Aurora 5th, thunder 29th.
Goderich	0.92	3	26	0.60	30	1.0	1	1.0	17	
Georgetown	2.37	12	9	1.01	30	0.9	12	0.6	12	Aurora 5th, fog 16, thun. 29.
Huntsville	1.25	2	21	1.15	29	14.8	7	6.5	25	
Lansdowne	1.46	3	25	1.09	30	6.0	3	3.0	10	Thunder 29-30.
Midland	2.81	7	22	0.90	30	3.0	3	3.0	16	
Montague	3.40	4	22	1.50	30	4.5	3	2.0	10	
MacTuc	2.64	3	26	1.90	30					Lake clear of ice.
Orangeville	2.28	2	20	1.64	30	13.2	8	3.1	13	
Princeton	1.80	3	25	1.09	30	0.5	1	0.5	10	Thunder 30th.
Parna										
Strathroy	2.14	6	23	0.98	30	0.5	3	0.5	8	Thunder 29th.
Sunnyside	1.32	6	22	0.75	30	5.5	4	5.0	8	Thunder 30th.
Sydenham	1.80	3	22	0.85	30	7.5	4	3.0	8	
Westport	2.30	5	20	1.16	29	8.5	5	3.0	10	Thunder 29, 30.
Warton	1.30	5	19	0.64	29	6.8	6	3.0	16	Thunder 29.
Wyoming	2.30	3	23	1.75	30	2.0	4	1.0	10	Thunder 28, 29.
Waford	2.31	6	24	0.91	30					
Westminster	1.81	3	18	0.73	29					Thunder 29, 30.
NEW BRUNSWICK—										
Point Escuminac	0.49	2	18	0.42	24	26.0	6	8.2	2	Auroaa 21.

PROPORTION OF BRIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF APRIL, 1906.

STATIONS	HOURS ENDING															
	3 a.m.	6 a.m.	9 a.m.	12 a.m.	3 a.m.	6 a.m.	9 a.m.	Noon	3 p.m.	6 p.m.	9 p.m.	12 p.m.	3 p.m.	6 p.m.	9 p.m.	12 p.m.
Victoria		0.04	0.28	0.48	0.51	0.54	0.64	0.70	0.71	0.71	0.60	0.68	0.60	0.55	0.61	
Nanaimo		0.54	0.33	0.57	0.61	0.61	0.62	0.64	0.70	0.50	0.64	0.72	0.64	0.63	0.44	
Agassiz		0.04	0.31	0.48	0.61	0.61	0.64	0.67	0.64	0.63	0.67	0.55	0.34	0.21	0.00	
Kamloops		0.06	0.30	0.52	0.57	0.66	0.74	0.67	0.68	0.64	0.60	0.60	0.45	0.26	0.02	
Savona		0.06	0.50	0.60	0.61	0.62	0.70	0.63	0.66	0.61	0.50	0.47	0.51	0.57	0.20	
Calgary																
Edmonton		0.24	0.36	0.47	0.54	0.57	0.63	0.65	0.70	0.70	0.65	0.61	0.61	0.43	0.16	
Medicine Hat	0.06	0.21	0.47	0.55	0.63	0.63	0.50	0.61	0.65	0.56	0.47	0.41	0.24	0.08	0.00	
Battleford		0.00	0.01	0.27	0.44	0.52	0.53	0.45	0.35	0.64	0.61	0.63	0.25	0.01	0.00	
Indian Head		0.07	0.27	0.45	0.53	0.58	0.62	0.56	0.60	0.60	0.61	0.50	0.40	0.20	0.00	
Brandon		0.00	0.06	0.26	0.49	0.50	0.63	0.66	0.62	0.60	0.51	0.54	0.30	0.18	0.02	
Winnipeg		0.12	0.42	0.52	0.61	0.66	0.60	0.66	0.65	0.68	0.65	0.61	0.50	0.27	0.01	
Woodstock		0.00	0.19	0.34	0.54	0.54	0.48	0.43	0.47	0.41	0.44	0.30	0.28	0.16	0.00	
Toronto		0.00	0.19	0.48	0.52	0.51	0.53	0.56	0.53	0.50	0.49	0.44	0.33	0.19	0.00	
Lindsay		0.04	0.17	0.32	0.48	0.54	0.56	0.50	0.49	0.45	0.44	0.26	0.21	0.22	0.00	
Barrie		0.00	0.37	0.49	0.48	0.54	0.53	0.49	0.44	0.51	0.51	0.51	0.42	0.26	0.00	
Gravenhurst																
Haileybury		0.05	0.34	0.30	0.48	0.47	0.64	0.62	0.62	0.58	0.56	0.56	0.50	0.21	0.00	
Kingston		0.01	0.26	0.46	0.55	0.60	0.50	0.50	0.52	0.47	0.41	0.40	0.33	0.15	0.02	
Ottawa		0.02	0.30	0.45	0.54	0.62	0.60	0.56	0.60	0.55	0.49	0.42	0.42	0.30	0.00	
Montreal		0.02	0.22	0.36	0.38	0.46	0.54	0.50	0.53	0.53	0.50	0.54	0.32	0.03	0.00	
Sherbrooke		0.14	0.44	0.57	0.55	0.54	0.54	0.48	0.43	0.49	0.49	0.54	0.43	0.37	0.07	
Quebec		0.00	0.17	0.47	0.54	0.54	0.58	0.50	0.51	0.55	0.56	0.51	0.48	0.25	0.01	
Fredericton		0.02	0.28	0.41	0.52	0.52	0.51	0.50	0.47	0.44	0.47	0.42	0.34	0.41	0.10	
Charlottetown		0.01	0.05	0.20	0.40	0.40	0.58	0.50	0.58	0.56	0.58	0.49	0.41	0.23	0.03	

	Victoria	Nanaimo	Agassiz	Kamloops	Savona	Calgary	Edmonton	Medicine Hat	Battleford	Indian Head	Brandon	Winnipeg	Woodstock	Toronto	Lindsay	Barrie	Gravenhurst	Haileybury	Kingston	Ottawa	Montreal	Sherbrooke	Quebec	Fredericton	Charlottetown
Mean proportion for month <i>Constant sun shine being 1</i>	0.53	0.57	0.47	0.51	0.55	—	0.53	0.44	0.36	0.45	0.42	0.51	0.35	0.39	0.36	0.40	—	0.45	0.40	0.43	0.41	0.45	0.42	0.40	0.39
Difference from average	0.13	—	0.23	—	—	—	—	0.15	0.07	0.13	0.02	0.13	0.10	0.11	0.05	—	—	0.07	0.02	0.08	—	—	0.02	—	
Maximum daily amount	0.90	0.83	0.83	0.86	0.91	—	0.94	0.83	0.71	0.87	0.84	0.90	0.86	0.83	0.96	0.88	—	0.87	0.91	0.87	0.97	0.94	0.84	0.83	0.86
Date	21	22	23	20	10	—	23	28	27	15	24	9	20	22	20	1	—	20	27	15	11	6	7	7	7
No. of days clouded	3	3	6	1	0	—	3	6	6	1	3	3	7	6	9	5	—	4	1	5	7	5	4	10	6

Aurora recorded :—

Where the class of aurora is noted by the observer, it is green, (I) being the brightest, (IV) the feeblest in brilliancy.

3. Insinger.
5. Madoc, IV ; Bruce Mines, IV ; Lucknow, IV ; North Bruce, Chaplin, III ; Insinger, Emsdale, Georgetown.
6. Cape Chatte, IV ; Clinton, I.
7. Paspebiac, IV ; Victoria, Alta., III ; Fort St. James.
8. Cape Chatte, IV ; Waitefield, III ; Hillsdown, IV ; Chaplin, IV.
9. Paspebiac, IV ; Treherne.
11. Waitefield, III ; Fort Vermilion, IV.
12. Fort Vermilion, IV.
13. St. Albans, IV ; Waitefield, IV ; Insinger ; Fort Vermilion, IV ; St. Peters, IV.
14. Madoc, IV ; Cockburn Island, Waitefield, III ; Red Willow, Salmon Arm.
15. St. Albans, II ; Waitefield, II ; Victoria, Alta., Insinger ; Fort Vermilion, II.
16. Insinger ; Fort Vermilion, III ; Treherne.
17. Paspebiac, IV ; St. Albans, III ; St. Peters, IV.
18. Insinger, Fort Vermilion, III.
19. Fort Vermilion, IV.
21. Point Escuminac.
22. Fort Vermilion, II.
23. Fort Vermilion, III.
25. Victoria, Alta.

Thunder recorded on :

2. Nanaimo.
10. Sable Island, E. Pt.
11. Sable Island, E. Pt.
13. Quesnel, Salmon Arm.
28. Wyoming.
29. Alton, Beatrice, Stony Creek, Birnam, Brantford, Hamilton, Port Dover, Port Burwell, Lakefield, Madoc, Peterboro, East Toronto, Port Hope, Clinton, Lucknow, Meaford, Owen Sound, Orillia, Sutton West, Aurora, Emsdale, Georgetown, Lansdowne, Strathroy, Westport, Wiarton, Wyoming, Westminster.
30. Birnam, Brantford, Peterboro, East Toronto, Sutton West, Arden, Croydon, Ennismore, Lansdowne, Princeton, Ont., Sunnyside, Westport, Westminster.

FORECASTS FOR APRIL, 1907.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 1265. These were divided as follows :—

District.	No. Issued.	VERIFIED.			Per centage.
		No. Fully	No. Partly	No. Not	
Alberta	82	65	15	2	88.4
Saskatchewan	81	55	18	11	76.2
Manitoba	88	66	13	9	82.4
Lake Superior	100	80	23	6	83.9
Lower Lake Region	120	93	26	6	84.8
Georgian Bay	123	93	20	10	83.7
Ottawa Valley	111	87	15	9	85.1
Upper St. Lawrence	111	86	17	8	85.1
Lower St. Lawrence	107	78	14	15	79.4
Gulf	107	76	14	17	77.6
Maritime Provinces, West	100	76	26	7	81.6
Maritime Provinces, East	100	76	25	8	81.2
Total	1265	931	226	108	82.5

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,
Director.

Meteorological Office, Toronto, }
28th May, 1907. }

DEPARTMENT OF MARINE AND FISHERIES, CANADA.

METEOROLOGICAL SERVICE.

Monthly Weather Review.

VOL. XXXI.

MAY, 1907.

INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

REMARKS UPON THE WEATHER.

The weather on the lower mainland and Islands of British Columbia was quite warm during the first week, also from the 16th to 31st, the temperature occasionally reaching 80° at some places. During the intervening period it was comparatively cool. Much bright sunshine was recorded during the first, third and last weeks and the rainfall, which was light, in most localities occurred chiefly on or about the 9th, 10th, 12th, 13th, 20th and 21st. Vegetation in this portion of British Columbia was in excellent condition. On the upper mainland the weather, like that in other portions of the Province, was warmer than usual and was quite warm during the first eight days, also after the 16th. From the 27th to 31st 80° was exceeded each day at some stations and on the 30th 94° was recorded at Spence's Bridge. Exceedingly fine bright weather occurred in most districts during the first and last nine or ten days. Rain was recorded chiefly on the 9th, 10th, from 15th to 21st, and on the last day of the month. Vegetation made rapid progress after the 15th.

The weather in the Western Provinces was unusually cool, and in Saskatchewan the departure from the average in the mean temperature was exceedingly large. On or about the 15th there was a marked rise in the temperature, 70° or over being recorded at some places, but cool weather immediately followed and it was not until the 25th that any decided improvement occurred. Dull weather prevailed and the precipitation which varied considerably in amount and date of occurrence, was recorded chiefly during the second half of the month. From some northern stations snow was reported on several dates. Vegetation was backward but by the 31st it was making good progress.

In Manitoba the weather was exceedingly cold and although there was a marked improvement after the 14th low temperatures at night were general and there were several quite cool days. In most districts bright sunshine was deficient, dull weather prevailing during the first twelve days, also from the 21st to 23rd and last five or six days of the month. The precipitation which was light occurred chiefly during the first week, also on or about the 11th and 18th and included some snow. Vegetation though backward made good progress after the 19th.

In Ontario the weather was unusually cool the mean temperature being much below the average in all portions of the province. Frosts occurred almost nightly in northern districts and they were quite frequent elsewhere. On the 13th and two following days there was a marked but temporary rise in the temperature, 80° being exceeded in some places; after the 15th temperatures between 60° and 65° were only occasionally recorded. The proportion of bright sunshine somewhat exceeded the average, and during the first ten or eleven days fine weather prevailed; nevertheless there were occasional light falls of rain or snow during this period. The precipitation which was light at most stations on or about the 4th, 8th, occasionally from the 13th to 18th and 26th to 29th. Vegetation though in a healthy condition was quite backward on the 31st.

The weather in the Province of Quebec like that in the provinces to the westward was unusually cold, but in districts contiguous to the St. Lawrence and Gulf the departures in the mean temperature were less marked than elsewhere. After the 12th somewhat warmer conditions prevailed but in eastern districts frosts at night were of quite frequent occurrence. Some fine bright weather was recorded during the first ten days, also after the 22nd, the intervening period being somewhat dull in

most of the month precipitation varied somewhat as to quantity, but in the Caspé Peninsula it slightly exceeded the average, whilst in other districts it was deficient. The falls at most stations were reported on the 1st, 4th, occasionally from the 13th to 20th and 27th to 29th. On the 31st vegetation was decidedly backward.

In New Brunswick the weather was cooler than usual, the temperature at night generally being quite low, frosts occurring occasionally at most places throughout the month. The proportion of bright sun was well below the average at Fredericton and there was much dull weather in southern districts, but in most localities elsewhere fine weather was reported almost daily from the 1st to 26th. Four falls of rain were recorded on or about the 2nd, 4th, 11th, 14th, 16th and 30th. On the 14th a heavy snow storm was reported from some stations. Vegetation was backward on the 31st.

The weather in Nova Scotia was quite cool and the departures from the average mean temperature were small, the same as in New Brunswick, frosts also occurring occasionally in more northern districts. Fine bright weather was general about the 5th to 9th and 22nd to 27th whilst the intervening periods were mostly dull. Rain was recorded on or about the 2nd, 5th, 11th, 12th, 17th, 25th, and during the last three days of the month, the total amount being below the average. Vegetation was much retarded by the cold weather.

In Prince Edward Island the weather was somewhat colder than usual but was less so than in provinces to the westward. Frosts were reported occasionally during the first half of the month but after the 15th it was slightly warmer, excepting during the last two or three days of the month when it was quite cool. Dull weather prevailed at Charlottetown, and the precipitation which included a heavy fall of snow on the 11th and 12th exceeded the average. Elsewhere the total amount was much less. The falls recorded occurred on or about the 1st, 4th, 11th, 16th, 17th, and during the last three days. Vegetation was quite backward. F. F. PAYNE.

ATMOSPHERIC PRESSURE.

The mean atmospheric pressure for May exceeded the average throughout Canada except in Northern Ontario, Eastern Quebec, and the Maritime Provinces, where subnormal values were recorded.

Departures from average were greatest over the Western Provinces, amounting generally to more than one-tenth of an inch.

The extremes of departure were -0.17 of an inch at Battleford, Sask., and -0.06 of an inch at St. John, N.B.

HIGH AREAS.

During May the majority of the areas of high barometric pressure which were charted were first observed while over the Western Provinces. Of the nine systems whose paths were traced, six passed southeastward over or north of the Lakes to the Atlantic; the others passing southeastward, west of the Lake Region, and off the Middle Atlantic Coast.

Most of the systems were quite pronounced, and cool weather was experienced in all districts during the period of their domination.

LOW AREAS.

Thirteen distinct cyclonic systems were charted during May, the place of origin, or movement into the field of observation, being divided between the Western Provinces and the extreme Southwest States, the paths followed converging as a rule towards the Gulf of St. Lawrence. Most of the areas moved either north or south of the Lake Region; only one directly crossed it. Energetic movements were frequent, and stormy weather accompanied each system along the course, but as a rule the amount of the precipitation was less than normal.

WINDS.

In British Columbia, over Vancouver Island and the Lower Mainland the southwesterly direction predominated with three gales and thirteen days of strong breezes.

Winds were largely northwesterly over Alberta and Saskatchewan with two gales in Southern Districts and four in northern, and from seven to twelve days of strong breezes.

In Manitoba the winds were from north to northwest with seven gales and fourteen days of strong breezes.

In the Lake Region, the direction was variable with a tendency towards the westerly direction. Two general gales were experienced and also 14 days of strong breezes.

The southwesterly direction was mostly in evidence in the Quebec and Upper St. Lawrence Valleys and local gales occurred on seven occasions and strong breezes on twenty-four days.

In the Lower St. Lawrence and Gulf the easterly direction was in evidence and five gales were experienced together with twelve days of strong breezes.

In the Maritime Provinces, the direction was south and southwest in the western districts and north and northeast in eastern, with two gales and nine days of strong breezes.

BRIGHT SUNSHINE.

A supernormal amount of Bright Sunshine was recorded in British Columbia and Ontario during May, but elsewhere in Canada the normal value was not reached. The extremes of departure from average were +19% at Victoria, B.C. and -21% at Battleford, Sask.

The maximum daily amount recorded in Canada was 95% of the possible at Calgary, Alta. on the 1st.

TEMPERATURE.

The mean temperature for May was below the average throughout Canada, except in British Columbia and the Yukon Territory, where small positive differences were recorded. The negative departures from average were especially large from Saskatchewan to New Ontario, ranging between 10° in the former Province, and 13° in the latter District. In Quebec, differences were from 2° to 7° and in the Maritime Provinces from 3° to 1°. An excess of from 2° to 4° occurred in British Columbia, and of 5° in the Yukon Territory.

The Highest and Lowest temperatures in each Province during May, 1907, were:

British Columbia,	94° ·0 on 30th at Spence's Bridge,	20° ·0 on 1st at Big Creek.
Alberta,	79° ·7 on 15th at Lethbridge,	3° ·0 on 1st at Paken.
Saskatchewan,	76° ·0 on 27th at Battleford,	2° ·5 on 6th at Prince Albert.
Manitoba,	79° ·5 on 31st at St. Allans,	4° ·0 on 6th at Carberry.
Ontario,	88° ·0 on 14th at Stony Creek,	0° ·0 on 1th at White River.
Quebec,	77° ·2 on 15th at St. Ann de Bellevue,	8° ·0 on 1st at Abitibi.
New Brunswick,	76° ·5 on 18th at St. Stephen,	25° ·0 on 5th at St. Stephen.
Nova Scotia,	74° ·0 on 17th at Port Hastings,	23° ·5 on 15th at Truro.
P. E. Island.	70° ·0 on 20th at Hamilton,	27° ·0 on 11th at Summerside.

PRECIPITATION.

There was an almost general deficiency in precipitation over the Dominion, the widest departures from average occurring in British Columbia, where in most districts the rainfall was less than one inch. In the Western Provinces the aggregate of rain and melted snow was very generally less than half the average, but some few stations in northern Alberta and north-eastern Saskatchewan recorded an average amount. In Ontario it was only in Algoma and Nipissing and the Niagara Peninsula that a normal amount was recorded, other parts of the province, and also western Quebec showing a deficiency of between 30 and 40 per cent. In Eastern Quebec and the northern portions of the Maritime Provinces, including Prince Edward Island, it was slightly in excess, while other districts showed a small deficiency.

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, MAY, 1907.

a Barometer not reduced to Sea Level

b Stations not furnished with Registering Thermometers

STATION.	Latitude N.	Longitude W.	Pressure			Temperature.					Duration of Wind from										Velocity of Wind			Precipitation								
			Mean reduced.	Highest.	Lowest.	Range.	Mean.	Difference from average.	Year-observed.	Highest.	Date.	Lowest.	Date.	Mean daily range.	Mean temperature of dew point.	Mean relative humidity.	Mean amount of cloud.	No. of days completely clouded.	Direction of Wind from						Mean miles per hour.	Highest miles per hour.	Days of calm.					
																			N.	N.E.	E.	S.E.	S.					S.W.	W.	N.W.	C.	
BRITISH COLUMBIA																																
Alberni	49 15 12	124 49	30.0				29.7	0.3	30.0	29.9	30	29.9	30	0.1	29.8	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Agassiz	49 14 12	121 30	30.2				29.7	0.5	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Atlin	49 14 12	121 30	30.2				29.7	0.5	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barkerville	36 35 13	121 35	41.80				41.8	0	41.8	41.8	35	41.8	35	0	41.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bella Coola	50 10 26	124 14	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bullion	49 15 12	121 30	30.2				29.7	0.5	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Burns	49 15 12	121 30	30.2				29.7	0.5	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Carleton Place	44 10 13	75 5	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilliwack	49 10 13	121 30	30.2				29.7	0.5	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilliwack	49 10 13	121 30	30.2				29.7	0.5	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clayton	49 10 13	121 30	30.2				29.7	0.5	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Comox	49 10 13	121 30	30.2				29.7	0.5	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cowichan	49 10 13	121 30	30.2				29.7	0.5	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cape Scott	50 10 26	124 14	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0				29.7	0.3	30.0	29.5	30	29.5	30	0.5	29.7	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fort Vancouver	46 10 13	122 45	30.0																													

ALBERTA -		1930		1931		1932		1933		1934		1935		1936		1937		1938		1939		1940		1941		1942		1943		1944		1945		1946		1947		1948		1949		1950		1951		1952		1953		1954		1955		1956		1957		1958		1959		1960		1961		1962		1963		1964		1965		1966		1967		1968		1969		1970		1971		1972		1973		1974		1975		1976		1977		1978		1979		1980		1981		1982		1983		1984		1985		1986		1987		1988		1989		1990		1991		1992		1993		1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		2021		2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		2032		2033		2034		2035		2036		2037		2038		2039		2040		2041		2042		2043		2044		2045		2046		2047		2048		2049		2050		2051		2052		2053		2054		2055		2056		2057		2058		2059		2060		2061		2062		2063		2064		2065		2066		2067		2068		2069		2070		2071		2072		2073		2074		2075		2076		2077		2078		2079		2080		2081		2082		2083		2084		2085		2086		2087		2088		2089		2090		2091		2092		2093		2094		2095		2096		2097		2098		2099		2100		2101		2102		2103		2104		2105		2106		2107		2108		2109		2110		2111		2112		2113		2114		2115		2116		2117		2118		2119		2120		2121		2122		2123		2124		2125		2126		2127		2128		2129		2130		2131		2132		2133		2134		2135		2136		2137		2138		2139		2140		2141		2142		2143		2144		2145		2146		2147		2148		2149		2150		2151		2152		2153		2154		2155		2156		2157		2158		2159		2160		2161		2162		2163		2164		2165		2166		2167		2168		2169		2170		2171		2172		2173		2174		2175		2176		2177		2178		2179		2180		2181		2182		2183		2184		2185		2186		2187		2188		2189		2190		2191		2192		2193		2194		2195		2196		2197		2198		2199		2200		2201		2202		2203		2204		2205		2206		2207		2208		2209		2210		2211		2212		2213		2214		2215		2216		2217		2218		2219		2220		2221		2222		2223		2224		2225		2226		2227		2228		2229		2230		2231		2232		2233		2234		2235		2236		2237		2238		2239		2240		2241		2242		2243		2244		2245		2246		2247		2248		2249		2250		2251		2252		2253		2254		2255		2256		2257		2258		2259		2260		2261		2262		2263		2264		2265		2266		2267		2268		2269		2270		2271		2272		2273		2274		2275		2276		2277		2278		2279		2280		2281		2282		2283		2284		2285		2286		2287		2288		2289		2290		2291		2292		2293		2294		2295		2296		2297		2298		2299		2300		2301		2302		2303		2304		2305		2306		2307		2308		2309		2310		2311		2312		2313		2314		2315		2316		2317		2318		2319		2320		2321		2322		2323		2324		2325		2326		2327		2328		2329		2330		2331		2332		2333		2334		2335		2336		2337		2338		2339		2340		2341		2342		2343		2344		2345		2346		2347		2348		2349		2350		2351		2352		2353		2354		2355		2356		2357		2358		2359		2360		2361		2362		2363		2364		2365		2366		2367		2368		2369		2370		2371		2372		2373		2374		2375		2376		2377		2378		2379		2380		2381		2382		2383		2384	
-----------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--

TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, MAY, 1907.

* Statistic not furnished with Regulating Thermonuclear

[illegible]

ONTARIO—Continued.

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA MAY, 1907.

a Barometer not reduced to Sea Level. * Stations not furnished with Registering Thermometers.

STATION.	Pressure.			Temperature.				Direction of Wind from.				Velocity of Wind.		Time of day.	
	Barometer reduced to Sea Level.	Barometer not reduced to Sea Level.	Height of Barometer.	Mean.	Maximum.	Minimum.	Range.	N.E.	E.	S.W.	W.	N.W.	No. of days completely clouded.	Mean amount of precipitation.	Mean relative humidity.
NOVA SCOTIA.															
Bridgetown	43.49	45.16	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
Halifax	44.20	45.26	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
Port Hastings	45.25	46.22	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
St. John's	46.10	47.10	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
Sable Island, E. Point	47.24	48.18	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
St. John's, M. Station.	48.24	49.18	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
Windsor	49.24	50.18	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
Whitby	50.24	51.18	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
Yarmouth	51.24	52.18	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
P. E. ISLAND.															
Charlottetown	66.11	63.10	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
Hamilton	67.11	64.10	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
Summerside	68.11	65.10	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
NEWFOUNDLAND.															
St. John's	43.49	45.16	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
St. John's, M. Station.	44.20	45.26	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
St. John's, E. Point	45.25	46.22	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
St. John's, W. Point	46.10	47.10	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
St. John's, N. Point	47.24	48.18	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
St. John's, S. Point	48.24	49.18	29.91	30.30	29.37	1.02	16.6	3	16	1	2	14	7	3	34
BERMUDA.															
Prospect	32.17	61.20	13.30	13.30	13.30	0.00	52.7	3	8	13	10	4	10	4	62

PRECIPITATION AT STATIONS REPORTING RAIN - 1907 WEATHER. &C.
DURING MAY, 1907.

STATION.	RAINFALL.				Date.	SNOW.				REMARKS.
	Amount in inches.	No. of Days, 10, or Over.	No. of Fall Days.	Heaviest Fall in Month.		Amount in inches.	No. of Days.	Heaviest Fall in Month.	Date.	
BRITISH COLUMBIA										
Coquitlam...	2.06	4	27	1.21	10					
Denman Island	1.77	6	25	1.12	8					
Goldstream Lake	0.87	5	26	0.57	10					
Hartley Bay										
Naas Harbour										
Nanaimo...	1.34	3	26	0.34	19					
Somass River	3.24	5	26	1.17	10					
Royal Oak	0.27	3	27	0.13	19					
Swanow Bay	1.12	9	22	0.80	11					
ALBERTA—										
Bardo	0.30	1	27	0.30	20	6.5	3	3.0	11	
Beaver Hills W	0.83	8	20	0.24	8	6.6	5	1.2	11 21	Thunder 28th.
Bismark	0.61	3	26	0.32	20	2.2	4	1.2	9	
Bruderheim	0.86	5	23	0.13	20	17.0	3	14.0	11	
Bittern Lake.	0.90	6	22	0.41	21	5.0	4	2.3	11	
Coutts	3.73	6	21	1.00	21 20	1	1	1.0	1	
Clover Bar	0.60	3	26	0.40	21	1.5	2	1.0	11	
Conjuring Creek	0.75	1	27	0.75	21	5.0	2	3.0	9 11	
Dorence	0.61	4	25	0.33	21	6.5	3	1.0	21	
Grassy Lake	1.00	3	28	0.40	31					
Heather Brae	1.16	9	21	0.27	8	6.8	1	3.0	11	Thunder 28th.
Islay	0.65	2	28	0.10	22	0.5	1	0.5	7	
Innisfail...	3.14	6	25	1.80	8	2.0	1	2.0	8	
Josephburg.	1.84	5	26	1.15	20					
Jumping Pound	0.95	8	16	0.34	21					
Lacombe.	0.34	2	27	0.33	31	1.5	2	1.0	8	Thunder 28th.
Macleod	1.17	6	25	0.47	17		1			
Magrath...	1.04	3	27	0.58	16	6.0	1	6.0	2	
Mayton	0.87	6	22	0.44	21	1.0	1	0.0	9	
Morinville...	0.78	5	23	0.25	21	7.5	3	1.7	11	
Okotoks	0.81	6	25	0.35	21					Thunder 28th, 29th.
Ponoka.	1.17	6	24	0.77	21	2.0	1	2.0	10	
Sion.	1.13	6	21	0.42	21	5.2	3	2.2	10	
Stirling							2			
Saddle Lake	0.15	2	17	0.10	17		2			
Vermilion	R	2	26	R	—	2.8	2	1.8	12	
Wabamun	1.65	8	20	0.47	21	5.2	2	1.5	9	
SASKATCHEWAN—										
Elm How	0.73	6	23	0.19	31	2.0	2	2.0	8	
Insinger.	1.18	3	22	0.50	21	1.0	5	1.0	11	Aurora 14th, 19th, 22nd, thunder 28th.
Last Mountain.	0.68	3	23	0.29	28		3			Thunder 28th.
Regina	0.67	4	19	0.26	28	2.0	5	1.0	10	Thunder 28th.
Hanley	0.40	3	18	0.20	27					
MANITOBA—										
Cartwright..	2.24	6	22	0.80	4	1.5	4	1.0	1	Aurora 14th, thunder 28th.
Greta	0.18	2	26	0.35	29					
Norquay	0.69	2	21	0.08	28	7.5	7	3.0	5	
Rapid City	0.26	7	23	0.20	29	2.4	3	1.3	11	
Beaver	1.00	2	29	0.70	29		3			
Rosebank.	1.05	2	29	0.16	29					
ONTARIO—										
Aurora..	1.33	4	23	0.85	15	3.5	3	3.2	4	
Arden	1.63	5	23	0.83	1	7.0	2	4.0	5	
Croydon	1.59	3	28	0.60	4	4.0	1	4.0	4	
Deer Park	1.06	5	24	0.62	26	1.6	2	1.2	4	
Dutton	2.43	4	21	1.04	26					
Emsdale	1.76	13	14	0.33	28	3.0	6	3.0	28	Thunder 13th, 14th.
Goderich	0.75	1	26	0.10	26	2.0	1	2.0	28	
Georgetown	1.75	10	21	0.80	26	1.0	3	1.0	4	Aurora 13th, thunder on 13th, 26th.
Huntsville..	1.69	5	25	0.68	15					
Lausdowne..	1.26	5	12	0.48	1	1.0	2	0.8	28	Thunder on 13th.
Macleod	0.83	3	19	0.33	26					
Midland.	0.88	5	27	0.43	15		2			
Montague...	1.77	1	27	0.19	26	2.0	2	2.0	4	
Orangeville.	2.37	4	25	1.29	16	5.3	2	3.3	4	
Parma										
Princeston.	4.76	8	21	1.91	21	*	3	*		
Sydenham	2.05	1	27	1.00	1					
Strathroy	2.80	8	23	1.15	25	*	2			Thunder 18th, 27th.
Wyoming.										
Waford	2.15	6	26	0.87	27					
Westport	0.61	3	23	0.38	25	3.5	4		4	Thunder 18th, 19th.
Wooler...	1.03	3	22	0.52	15	3.0	2	3.0	4	
Westminster.	1.92	5	25	0.55	15	*	3	*		
Warton	0.78	4	26	0.30	28	1.3	3	1.3	27	Thunder 26th.
Ennismore	1.00	3	27	0.45	26	4.0	3	1.0	4	Thunder 15th, 18th.
NEW BRUNSWICK—										
Point Escuminae.....	0.77	4	24	0.63	30	1.1	1	1.1	11	Fog, 15th 19th.

PROPORTION OF BEING SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF MAY 1907.

STATIONS	Hours Ending																
	5 a. m.	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.	8 p. m.	
Victoria		0.01	0.27	0.47	0.63	0.72	0.73	0.82	0.81	0.82	0.82	0.76	0.63	0.37	0.13		
Nanaimo	0.05	0.23	0.52	0.58	0.59	0.64	0.64	0.68	0.67	0.67	0.63	0.60	0.60	0.37	0.36		
Agassiz		0.01	0.24	0.52	0.62	0.66	0.64	0.65	0.65	0.66	0.66	0.59	0.49	0.19	0.03		
Kamloops		0.24	0.45	0.59	0.67	0.66	0.69	0.66	0.64	0.54	0.37	0.38	0.52	0.43	0.26	0.01	
Savonas		0.11	0.38	0.54	0.59	0.64	0.65	0.66	0.58	0.58	0.55	0.64	0.54	0.37	0.23		
Calgary	0.02	0.19	0.40	0.45	0.49	0.50	0.46	0.57	0.57	0.47	0.47	0.44	0.42	0.34	0.10		
Medicine Hat		0.15	0.27	0.34	0.39	0.52	0.57	0.46	0.59	0.66	0.58	0.53	0.52	0.44	0.05		
Edmonton		0.07	0.38	0.43	0.49	0.50	0.50	0.48	0.46	0.52	0.47	0.49	0.47	0.47	0.36	0.20	
Battleford		0.02	0.20	0.31	0.52	0.52	0.54	0.52	0.43	0.50	0.55	0.28	0.26	0.20	0.03		
Indian Head		0.07	0.31	0.45	0.55	0.58	0.54	0.54	0.50	0.51	0.48	0.52	0.52	0.49	0.10		
Brandon		0.00	0.28	0.45	0.60	0.60	0.50	0.46	0.55	0.67	0.58	0.47	0.47	0.42	0.15		
Winnipeg		0.19	0.43	0.51	0.63	0.60	0.67	0.61	0.61	0.63	0.68	0.62	0.51	0.35	0.09		
Woodstock		0.09	0.43	0.54	0.56	0.57	0.60	0.40	0.57	0.61	0.60	0.59	0.52	0.41	0.08		
Toronto		0.03	0.43	0.56	0.61	0.58	0.58	0.67	0.48	0.68	0.67	0.67	0.61	0.45	0.00		
Lindsay	0.01	0.22	0.32	0.52	0.64	0.56	0.62	0.59	0.56	0.56	0.63	0.65	0.56	0.51	0.43	0.11	
Barrie		0.20	0.52	0.60	0.60	0.65	0.63	0.66	0.60	0.63	0.61	0.66	0.60	0.52	0.08		
Gravenhurst																	
Haileybury	0.03	0.27	0.43	0.38	0.59	0.41	0.48	0.51	0.51	0.53	0.54	0.45	0.43	0.46	0.40	0.03	
Kingston		0.21	0.56	0.61	0.62	0.62	0.67	0.69	0.61	0.59	0.57	0.54	0.51	0.48	0.14		
Ottawa		0.06	0.35	0.49	0.54	0.64	0.63	0.66	0.65	0.58	0.59	0.50	0.49	0.42	0.07		
Montreal		0.01	0.25	0.38	0.48	0.48	0.47	0.39	0.41	0.32	0.31	0.31	0.25	0.16	0.00		
Sherbrooke		0.14	0.31	0.42	0.43	0.51	0.55	0.46	0.49	0.42	0.50	0.49	0.40	0.32	0.13		
Quebec		0.08	0.30	0.40	0.45	0.47	0.41	0.47	0.50	0.52	0.47	0.44	0.42	0.37	0.17		
Fredericton		0.11	0.34	0.44	0.48	0.43	0.40	0.35	0.45	0.45	0.46	0.40	0.35	0.26	0.14		
Charlottetown		0.17	0.39	0.43	0.50	0.52	0.55	0.49	0.56	0.44	0.49	0.49	0.34	0.28	0.14		

	Victoria.	Nanaimo.	Agassiz.	Kamloops.	Savonas.	Calgary.	Medicine Hat.	Edmonton.	Battleford.	Indian Head.	Brandon.	Winnipeg.	Woodstock.	Toronto.	Lindsay.	Barrie.	Gravenhurst.	Haileybury.	Kingston.	Ottawa.	Montreal.	Sherbrooke.	Quebec.	Fredericton.	Charlottetown.
Mean proportion for month Constant sun shine being 1	0.55	0.52	0.43	0.48	0.46	0.39	0.40	0.40	0.23	0.40	0.44	0.47	0.46	0.49	0.50	0.52		0.41	0.50	0.45	0.33	0.35	0.36	0.34	0.38
Difference from average.	0.19	-	-0.13						0.24	0.08	0.04	0.06	-0.03	-0.01	0.03	0.06		0.02	0.06	0.18				0.10	
Maximum daily amount.	0.84	0.88	0.71	0.90	0.88	0.46	0.90	0.91	0.76	0.80	0.81	0.85	0.80	0.82	0.97	0.87		0.91	0.91	0.87	0.92	0.90	0.85	0.79	0.87
Date	6830	30	12	4	6	1	2	2	19	6	13	14	30	1	29	11		29	4	1	25	25	25	18	26
No of days com- pletely clouded	3	6	0	1	2	9	3	7	13	5	0	2	6	2	1	1		4	3	1	1	1	5	6	5

Aurora recorded

Where the class of aurora noted by the observer, it is given, I being the lightest, (IV) the feeblest in brilliancy.

1. Waitfield, IV.
2. St. Albans, III; Waitfield, III; Pakan, III; Hillsdown, IV; Gray Hill, IV; Haileybury, III; Quebec, III.
3. St. Albans, III; Waitfield, IV; Haileybury, IV.
4. Waitfield, IV.
5. Halifax, IV.
12. Lucknow, IV; Waitfield, III; Pasbebie, Grand Manan, IV; Vancouver, III.
13. Georgetown, IV; St. Albans, IV; Clinton, Pakan, III; Toronto, IV.
14. Cartwright, IV; Waitfield, I; Hillsdown, IV; Gray Hill, III; Insinger, IV; Halifax, IV.
15. Waitfield, III; Blackfalds, Edmonton, IV; Minnedosa, I.
16. St. Albans, IV; Waitfield, IV.
18. Copper Cliff, Lake Talon, Lucknow, IV; Waitfield, IV; Toronto, IV; Haileybury, III.
19. Waitfield, IV; Estevan, Insinger, IV; Birnam, IV; Toronto, IV.
20. Channell, Nfld.
22. Insinger, III.
25. Grand Manan, IV.
26. Kingston.
28. Lake Talon, Beatrice.
30. Waitfield, IV.

Thunder recorded on:

4. Oakbank.
5. Ladner, Princeton, Chilliwack, Vancouver.
6. Vancouver.
7. Hillsdown, Gray Hill, Blackfalds.
9. Barrie, Chicoutimi.
10. Vancouver.
11. Edmonton, Yarmouth.
12. Bruce Mines.
13. Emsdale, Georgetown, Lansdowne, Lake Talon, Bruce Mines, Cockburn Island, Beatrice.
14. Emsdale, Lake Talon, Uplands, Bruce Mines, Sutton West, Cockburn Island, Brome, Haileybury, Parry Sound, Montreal.
15. Ennismore, Barrie, Gravenhurst.
16. Sutton West, Medicine Hat.
17. Birnam.
18. Strathroy, Westport, Ennismore, Lake Talon, Brantford, Paris, Birnam, Madoc, Peterboro', Chicoutimi, Port Stanley, Lindsay, Haileybury, London, Quebec.
19. Westport, Edmonton, Chilliwack.
20. Estevan.
21. Naas Harbour.
22. Alberni, Rivers Inlet.
23. Big Creek.
24. Big Creek.
26. Georgetown, Wiarton, Owen Sound, Meaford, Clinton, Lake Talon, Lucknow, Cockburn, Island, Barrie, North Bruce, Brantford, Hamilton, Princeton, Paris, Stoney Creek, Birnam, Port Dover, Port Burwell, Agincourt, East Toronto, Madoc, Port Stanley, Toronto, Charlottetown, Lindsay, London.
27. Strathroy, Sutton West, Birnam.
28. Waitfield, Red Willow, High River, Okotoks, Heather Brae, Gatesgarth, Beaver Hills W., Moose Jaw, Insinger, Last Mountain, Regina, Edmonton, Swift Current, Jumping Pond.
29. Cartwright, Almassippi, Oakbank, Red Willow, Gray Hill, Okotoks, Waitfield, Qu'Appelle, Winnipeg.
30. Gray Hill, Gatesgarth, Calgary, Swift Current.
31. Kenora, Big Creek, Swift Current.

FORECASTS FOR MAY, 1907.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are in force the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 1325. These were divided as follows:-

District.	No. Issued.	Verified.			
		No. Fully.	No. Partly.	No. Not.	Per centage.
Alberta	84	2	5	7	88.7
Saskatchewan	80	67	10	3	91.0
Manitoba	86	4	7	8	86.6
Lake Superior	123	6	20	8	85.4
Lower Lake Region	128	100	21	7	86.3
Georgian Bay	126	98	19	9	85.3
Ottawa Valley	110	89	16	5	88.2
Upper St. Lawrence	109	89	16	5	89.0
Lower St. Lawrence	121	98	19	4	88.8
Gulf	120	96	20	4	87.5
Maritime Provinces, West	119	94	18	7	86.5
Maritime Provinces, East	119	88	21	7	84.0
Total	1325	1005	196	74	87.0

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

Meteorological Office, Toronto,

2nd July, 1907.

R. F. STUPART,
Director.

DEPARTMENT OF MARINE AND FISHERIES, CANADA.

METEOROLOGICAL SERVICE.

Monthly Weather Review.

VOL. XXXI.

JUNE, 1907.

No. 6.

INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to Mr. C. D. Keen, Chief of Weather Bureau, Washington, D.C.

REMARKS UPON THE WEATHER.

The weather over the lower mainland and islands of British Columbia did not depart much from the normal, but it was somewhat drier than usual in most districts. Much fine weather was recorded during the first five or six days, also after the 16th the rain recorded occurring chiefly between the 5th and 17th. The temperature was exceedingly variable, and at Alberni a daily range of between 40° and 50° was occasionally recorded after the 19th. Vegetation was in excellent condition on the 30th. Over the upper mainland the weather was quite similar to that in districts to the westward, the only marked departure being in the rainfall which was light in most localities. From the 5th to 9th rain occurred frequently and there were also falls about the 15th and 23rd to 30th. In this portion of the province vegetation was considerably retarded by the dry weather.

In the Western Provinces the only marked departure from the average noticeable was in the rainfall which, though varying somewhat with the district, was below the average at most places. The falls recorded, though light, were quite frequent and were well distributed through the month. Cloud and sunshine followed in quick succession, but dull weather preponderated. Owing to the unusually favourable weather prevailing, vegetation made splendid progress and by the 30th its condition was not much below the average.

The weather in Manitoba was slightly cooler than usual, but at many places the mean temperature was normal and the greatest departures were less than 2° below the average. The proportion of bright sunshine was considerably below the average and rain was frequent, the chief falls occurring about the 4th, 10th to 12th, 16th, 20th to 24th and 29th. Vegetation was backward on the 30th, but it made excellent progress during the month.

The weather in Ontario was somewhat cooler than usual, excepting in northern districts where on the contrary the mean temperature at many places slightly exceeded the average. A marked rise in the temperature occurred after the 12th, 80° being frequently exceeded and 90° being occasionally recorded at some places. Much fine weather was reported between the 6th and 18th, also after the 26th, but the proportion of bright sunshine was below the average. Rain was recorded generally about the 4th to 6th, 18th, 19th, 22nd, 26th and 30th, the aggregate amount being below the average at most stations but above at some places. The condition of vegetation on the 30th was normal.

In the Province of Quebec the weather was a little cooler than usual in most districts, but in the vicinity of Montreal and at some northern stations the mean temperature on the contrary was slightly above the average. After the 12th much warmer weather prevailed, but at many places several rapid changes in the temperature characterised the weather of the latter half of the month. Much fine weather was recorded during the first four days, also from the 10th to 18th the chief rainy periods occurring about the 5th to 9th, 19th to 27th and 30th. Northeasterly winds prevailed and on the 30th vegetation was backward.

The weather in New Brunswick was somewhat cool but after the 11th, although there were occasional relapses, there was a marked rise in the temperature, 80° being exceeded upon several days. Exceedingly dull weather generally prevailed, but from the 1st to 5th and 12th to 19th much bright sunshine was recorded. Rain, which in the aggregate was light, was recorded chiefly about the 6th, 9th, 16th, 21st, 25th and 27th. Light frosts were noted during the first half of the month, but little damage was caused thereby. Vegetation was backward.

In Nova Scotia the weather was quite cool more especially up to the 12th when temperatures at night between 45° and 45° were frequently recorded. After the date mentioned warmer weather was general. Throughout the month there was much cloudiness and there were few bright days, nevertheless the rain which was recorded chiefly about the 7th to 10th, 16th, 20th, 25th, 27th and 30th was light in the aggregate. Vegetation throughout the Province was backward.

The weather in Prince Edward Island was characterised by frequent cold easterly winds up to the 17th and the mean temperature of the month was below the average. After the 17th it was generally much warmer, but low temperatures at night were frequent. Dull weather prevailed, but the rain which was recorded about the 7th, 21st, 22nd and 27th was below the average quantity for the month. Light ground frosts were reported but they appear to have done little damage, and on the 30th the condition of vegetation was normal. E. F. PAYNE.

ATMOSPHERIC PRESSURE.

A subnormal value of the mean atmospheric pressure for June was recorded throughout Canada, except over Northern Ontario, Quebec, and the Maritime Provinces, where the normal was exceeded. A range of departure from average of 0.18 of an inch occurred, the extremes being - 0.08 of an inch at Edmonton, Alta., and Battleford, Sask., and + 0.10 of an inch at Father Point, Que.

HIGH AREAS.

The anti-cyclonic systems of June were, for the most part, of feeble intensity, and as a rule exhibited a tendency to disperse as they passed eastward.

Six areas were charted during the month, three of which were first observed over the far Northwest, and pursued a southeasterly course to the Middle Atlantic Coast. Two systems came into the field of observation from the Hudson's Bay Region, and one from the Middle Pacific Coast. The centres of all the systems ultimately passed eastward to the Atlantic.

LOW AREAS.

Eight areas of low barometric pressure were charted during June, the majority being of feeble energy, and assuming an erratic course. The systems exhibited a tendency to hover while over the western portion of the continent.

The areas were first observed over the North West Territories and South West States, and, as a rule, followed a converging, irregular course to the Gulf of St. Lawrence. The accompanying precipitation was generally light, and few areas gave stormy conditions.

WINDS.

In British Columbia, light southerly and southwesterly winds predominated during June.

In Alberta, the northwesterly direction was most in evidence with three days of strong breezes, eight of fresh, and local gales on one occasion.

The northwesterly direction also prevailed over Northwestern Saskatchewan, elsewhere in the Province the direction was more variable. Gales were recorded on several occasions and strong breezes were also frequent.

In Manitoba the direction of the wind was variable, and strong breezes were of frequent occurrence; also gales were recorded on from five to eight days.

In the Lake Region the direction of the wind was largely variable, and fresh to strong breezes were of frequent occurrence, also local gales were recorded on three days.

Strong southwesterly winds prevailed throughout the Ottawa and Upper St. Lawrence Valleys. Local gales occurred on three occasions.

In the Lower St. Lawrence Valley and Gulf, strong northeasterly winds were most in evidence, and gales were experienced on six occasions.

In the Maritime Provinces the direction was southerly and southwesterly, and strong winds were occasionally recorded as well as one gale.

TEMPERATURE.

The mean temperature was a little higher than average in the northern portions of Ontario, Manitoba and Saskatchewan and on Vancouver Island, while in other parts of the Dominion it was below average, the largest negative departure, about 4° , being in Southwestern Ontario. The month opened rather cool in nearly all parts of the Dominion, but within a few days the weather became warm and seasonable. In the West no very pronounced heat spells occurred, but in Ontario and Quebec after the 16th the temperature frequently exceeded 80° , and on several days 90° was reached in many localities.

The Highest and Lowest temperatures in each Province during June, 1907, were :

British Columbia,	$95^{\circ} \cdot 0$ on 23rd at Salmon Arm,	$25^{\circ} \cdot 0$ on 12th at Big Creek.
Alberta,	$88^{\circ} \cdot 6$ on 27th at Lethbridge,	$24^{\circ} \cdot 0$ on 1st at Kneehill.
Saskatchewan,	$88^{\circ} \cdot 0$ on 26th at Battleford,	$32^{\circ} \cdot 0$ on 4th at Alameda and Moose Jaw.
Manitoba,	$92^{\circ} \cdot 0$ on 20th at St. Albans,	$28^{\circ} \cdot 5$ on 5th at Brandon.
Ontario,	$96^{\circ} \cdot 6$ on 17th at Haileybury,	$31^{\circ} \cdot 7$ on 11th at Clontarf.
Quebec,	$91^{\circ} \cdot 5$ on 23rd at St. Ann de Bellevue —	$31^{\circ} \cdot 0$ on 8th at Father Point.
New Brunswick,	$94^{\circ} \cdot 0$ on 23rd at Chatham, 18th at Woodstock, —	$29^{\circ} \cdot 0$ on 1st and 4th at Sussex.
Nova Scotia,	$87^{\circ} \cdot 0$ on 24th at Port Hastings, 19th at Windsor —	$27^{\circ} \cdot 9$ on 2nd at Sydney.
P. E. Island,	$85^{\circ} \cdot 0$ on 24th at Hamilton,	$34^{\circ} \cdot 0$ on 4th and 11th at Summerside.

RAINFALL.

Over the Dominion as a whole the rainfall of June was less than average, the most pronounced deficiencies occurring in Southern New Brunswick, New Ontario and in British Columbia. In Alberta the fall was nearly average, as it also was in Northern New Brunswick and Southwestern Ontario. Nearly all stations in the Province of Quebec recorded an excess approximating one inch; and Western Manitoba and Southern Saskatchewan also recorded an excess, and in some few localities the rainfall may have been as much as double the average amount.

BRIGHT SUNSHINE.

Bright Sunshine was deficient throughout Canada during June, except in Vancouver Island, B.C., and near the eastern end of Lake Ontario, Ont., where slightly supernormal values were recorded.

The extremes of departure from average were -10% at Brandon and Winnipeg, Man., and -4% at Victoria, B.C., and the maximum daily amount, 97% , was registered at Lindsay, Ont., on the 27th.

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, JUNE, 1905

Exhaustometer not required for spin level.

[illegible]

Yukon:

(*) $1111 \cdot 1111 = 11111111$

White. E

Area	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Albion	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Albion	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Albion	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Albion	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Albion	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79																					

The following are the names of the persons who have been appointed to the various positions in the various departments of the Government of the State of New York, for the year 1900.

1. The first step is to identify the problem or question that needs to be addressed. This involves understanding the context and the specific requirements of the task.

1. The first part of the paper is devoted to a review of the literature on the topic. It starts with a general overview of the field, followed by a more detailed discussion of the specific issues at hand. The author then presents his own findings, which are based on a series of experiments and observations. Finally, he concludes with some thoughts on the future of the field and the implications of his work.

[illegible]

PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c., DURING JUNE, 1907.

STATION.	RAINFALL.				Date.	SNOWFALL.				REMARKS.
	Amount in inches.	No. of Days, 24 or Over.	No. of Fair Days.	Heaviest Fall in Month.		Amount in inches.	No. of Days.	Heaviest Fall in Month.	Days.	
BRITISH COLUMBIA.										
Cogitlam ..	1.67	9	21	0.45	13					Thunder 20th.
Denman Island	1.37	8	22	0.50	11					
Goldstream Lake	1.44	8	22	0.28	12					
Hartley Bay	2.96	10	20	0.97	7					
Nanaimo ..	1.68	6	24	0.65	11					
Nass Harbour	1.76	15	15	0.43	8					
Royal Oak	0.38	2	28	0.20	9					
Sonias River	1.37	6	23	0.76	11					Thunder 20th.
Swanson Bay	5.61	17	13	1.02	7					
ALBERTA—										
Bruderheim	2.61	12	18	0.72	8					Aurora 9th, 25th, thunder 12th, 13.
Bittern Lake.	2.74	13	17	0.58	20					Thunder 5th, 26, 27.
Bardo	2.80	9	21	0.70	13					Thunder 12th, 13, 18, 26, 27.
Beaver Hills, W.	2.9	14	16	1.02	7					
Bismark	4.82	15	15	1.31	29					Thunder 12th, 13, 18, 26, 27.
Conits	1.47	9	21							
Conjuring Creek	3.93	11	19	0.92	8					
Clover Bar ..	2.11	4	26	0.88	27					
Dorcnlee	3.67	10	20	1.00	30					
Grassy Lake	0.40	5	25	0.20	20					
Heather Brae	3.46	15	15	0.89	29					Thunder 12th, 18.
Innisfail....										
Islay ..										
Josephburg.	3.07	8	22	1.57	22					11th Tornado between 5 and 6 p.m., heavy thunder and lightning.
Jumping Pound	3.67	15	15	0.50	7					Thunder 12th, 26.
Lacombe	5.50	8	22	1.74	34					Thunder 12th, 18.
Magrath...	3.24	7	23	1.28	22					
Macleod ..	4.47	9	21	2.00	22					
Mayton	1.61	8	22	1.62	13					
Morinville..	2.73	8	21	0.60	13					
Okotoks	4.33	11	19	0.91	22					Thunder 1st, 11, 12, 28.
Ponoka	5.17	14	16	2.08	29					Thunder 5th, 12, 13, 14, 15, 25.
Saddle Lake ..	0.83	4	17	0.36	6					
Sion	4.17	16	14	0.99	8					Thunder 13th, 17, 18, 19, 20, 26, 28.
Stirling										Thunder 19th, 20.
Vermilion	0.72	5	25	0.20	23					Thunder 19th, 20.
Wabamun	1.52	18	12	0.76	15					
SASKATCHEWAN.										
Elm How	3.60	12	17	1.45	15					Thunder 3rd, 13, 14, 15, 16, 20.
Hanley	2.13	6	21	0.67	29					Thunder 13th, 14, 15, 16, 20, 21 27.
In-singer.	5.23	12	18	1.42	15					Aurora 19th.
Last Mountain.	1.36	11	15	0.95	30					Thunder 6th, 11.
Regina	5.22	18	10	1.75	14					Thunder 13th, 14, 19, 20, 27.
MANITOBA—										
Beaver	1.18	7	18	0.65	24					Thunder 1st, 13, 20, 21, 23, 29.
Cartwright..	2.23	16	14	0.82	21					Aurora 19th.
Gretna	1.88	6	20	0.88	10					Thunder 20th, 21, 23.
Norquay ..	0.64	9	20	0.28	21					Thunder 19, 20, 21, 23, 24, 28, 29.
Rapid City	3.89	13	15	1.05	24					Thunder 10th, 14, 16, 20, 23, 24, 27, 28, 29, Aurora 19th.
Rosebank.										
ONTARIO—										
Arden	1.07	6	24	0.45	5					Thunder 20th, 26.
Aurora..	3.18	7	22	1.45	25					Thunder 19th, 21, 23, 25.
Croydon	0.83	2	28	0.51	5					Thunder 18th.
Dutton	2.76	4	18	1.00	1					
Deer Park.	1.36	5	25	0.55	5					
Ennismore	3.15	6	24	1.05	19					
Emsdale	5.42	10	19	1.93	23					Thunder 19th, 21, 22, 23, 24.
Goderich	1.91	7	23	1.00	5					
Georgetown	2.58	8	16	1.13	21					Thunder 18th, 19, 21, 22, 23, 24, 30, Aurora 19th.
Huntsville..	4.45	9	21	1.30	22					Thunder 19th, 21, 22, 23, 24.
Lansdowne..	1.65	3	19	0.69	25					Thunder 5th, 19, 24.
Midland.	3.94	9	20	1.18	4					Thunder 19th, 21, 22, 23, 26, 29, 36, 30 on 19th.
Montague....	0.95	4	25	0.36	5					
MacCue.	0.43	3	27	0.18	4					
Orangeville.	2.57	5	24	0.82	20					
Princeton..	2.38	6	24	1.15	4					Thunder 19th, 30.
Parma										
Strathroy..	4.30	9	24	1.06	19					Thunder 19th, 23, 25.
Sunnyside....	1.81	5	20	0.97	4					Thunder 18th, 19, 30.
Sydenham ..	1.67	4	25	0.75	30					
Westport ..	0.84	3	27	0.47	30					Thunder 5th, 15, 16, 25, 30.
Warton ..	1.23	5	20	0.54	5					Thunder, 22, 26.
Wyoming..										
Watford ..	2.89	6	20	0.76	25					
Westminster.	2.60	6	21	0.94	26					Thunder 19th, 24.
NEW BRUNSWICK—										
Point Escomiac.	2.46	6	19	1.06	26					Thunder 6th, 24.

PROPORTION OF THE SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF JUNE 1907.

STATION	HOURS ENDING															
	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon	1 p.m.	2 p.m.	3 p.m.	4 p.m.
Victoria		0.00	0.04	0.38	0.57	0.46	0.40	0.64	0.70	0.60	0.65	0.65	0.50	0.55	0.38	0.16
Nanaimo		0.10	0.36	0.56	0.57	0.40	0.38	0.52	0.53	0.41	0.52	0.49	0.33	0.55	0.54	0.41
Agassiz		0.00	0.00	0.17	0.31	0.32	0.26	0.48	0.46	0.47	0.47	0.37	0.32	0.23	0.11	0.00
Kamloops		0.00	0.26	0.42	0.46	0.50	0.58	0.64	0.49	0.55	0.48	0.45	0.40	0.38	0.31	0.21
Sacomas																
Calgary		0.04	0.50	0.56	0.54	0.50	0.58	0.46	0.61	0.64	0.58	0.56	0.50	0.57	0.46	0.18
Medicine Hat	0.07	0.54	0.54	0.50	0.63	0.63	0.60	0.58	0.54	0.75	0.61	0.61	0.50	0.55	0.44	0.17
Edmonton		0.10	0.52	0.54	0.48	0.58	0.50	0.61	0.62	0.66	0.58	0.54	0.55	0.50	0.50	0.44
Battleford																
Indian Head		0.00	0.42	0.40	0.46	0.46	0.33	0.50	0.52	0.57	0.61	0.53	0.56	0.47	0.41	0.08
Brandon		0.00	0.04	0.44	0.39	0.46	0.35	0.58	0.57	0.46	0.52	0.50	0.50	0.47	0.34	0.07
Winnipeg		0.00	0.2	0.45	0.47	0.48	0.35	0.53	0.58	0.62	0.63	0.65	0.56	0.57	0.51	0.23
Woodstock			0.12	0.42	0.57	0.64	0.68	0.66	0.60	0.67	0.65	0.61	0.58	0.56	0.53	0.34
Toronto			0.02	0.50	0.60	0.60	0.71	0.80	0.78	0.72	0.65	0.65	0.57	0.52	0.51	
Lindsay		0.07	0.28	0.31	0.35	0.57	0.62	0.65	0.60	0.63	0.72	0.61	0.64	0.50	0.41	0.35
Barrie			0.32	0.57	0.68	0.74	0.70	0.82	0.85	0.81	0.71	0.71	0.64	0.60	0.66	0.52
Gravenhurst			0.02	0.38	0.58	0.59	0.64	0.61	0.72	0.7	0.60	0.67	0.62	0.60	0.60	0.12
Halleybury		0.04	0.35	0.49	0.53	0.58	0.64	0.65	0.63	0.65	0.71	0.66	0.61	0.50	0.50	0.40
Kingston		0.00	0.26	0.35	0.62	0.71	0.78	0.83	0.79	0.74	0.68	0.68	0.63	0.57	0.48	0.15
Ottawa				0.19	0.41	0.54	0.62	0.67	0.67	0.75	0.72	0.58	0.53	0.57	0.46	0.15
Montreal			0.04	0.27	0.36	0.55	0.60	0.60	0.58	0.60	0.66	0.67	0.57	0.53	0.32	0.03
Sherbrooke	0.07		0.24	0.37	0.49	0.46	0.52	0.60	0.61	0.60	0.57	0.50	0.54	0.53	0.44	0.26
Quebec			0.13	0.24	0.39	0.55	0.40	0.48	0.54	0.52	0.51	0.39	0.45	0.41	0.28	0.16
Fredericton			0.15	0.28	0.36	0.39	0.46	0.50	0.51	0.43	0.53	0.51	0.49	0.47	0.40	0.20
Charlottetown		0.02	0.33	0.43	0.49	0.54	0.56	0.53	0.57	0.64	0.59	0.60	0.60	0.61	0.50	0.34

	Victoria	Nanaimo	V.	Kamloops	Sacomas	Calgary	Medicine Hat	Edmonton	Battleford	Indian Head	Brandon	Winnipeg	Woodstock	Toronto	Lindsay	Barrie	Gravenhurst	Halleybury	Kingston	Ottawa	Montreal	Sherbrooke	Quebec	Fredericton	Charlottetown
Mean proportion for month (0.44 = 1)				37		0.47	0.50	0.47		0.39	0.35	0.43	0.51	0.51	0.40	0.62	0.48	0.50	0.55	0.44	0.43	0.43	0.32	0.38	0.47
Constant "sun" "shadowing"																									
Difference from average (0.04 = 1)										0.03	0.10	0.10	0.02	0.06	0.05	0.11			0.02	0.04	0.07		0.08		
Maximum daily amount (0.82 = 80)				86		0.94	0.94	0.88		0.79	0.70	0.81	0.89	0.79	0.97	0.94	0.82	0.90	0.85	0.78	0.91	0.89	0.85	0.89	0.92
Date	24	25	2	23		25	25	25		25	19	27	9	9	10	27	7	15	10	8	11	12	28	28	11
No. of days completely clouded	2	1		1		8	2	4		3	5	3	5	1	2	2	6	3		2	2	2	1	8	6

Aurora recorded :

Where the class of aurora is noted by the observer, it is given, (I) being the faintest, (IV) the feeblest in brilliancy.

2. Waitfield, III.
3. Paspebiac, IV ; Percé, Cape Chatte, Father Point, IV.
8. Waitfield, IV.
9. Bruderheim, Huntsville, Lake Talon, Gray Hill, III ; Haileybury, III.
10. Woodstock, N.B., Edmonton, III ; Haileybury, III ; Quebec, IV.
11. Haileybury, IV.
17. Waitfield, II.
19. Insinger, Cartwright, Rapid City, Cape Chatte, Kenora, II ; St. Albans, I ; Almasippi, I ; Waitfield, IV ; Haileybury, I.
27. Haileybury, III.
28. Father Point, IV.

Thunder recorded on :

1. Okotoks, Cartwright, Pekisko, High River, Hamilton.
2. Pekisko, High River, Lethbridge, Port Burwell.
3. Elm How, Chaplin, Port Burwell.
4. Quesnelle, Princeton, Big Creek, Vancouver.
5. Bittern Lake, Ponoka, Lansdowne, Westport, Alix, Hillsdown, Gray Hill, Red Willow, Blackfalds, Bon Accord, Chaplin.
6. Last Mountain, Pt. Esquimaux, Chaplin.
7. High River, Chaplin, Summerside.
8. North Nicomen, Kneehill, Hillsdown, Gray Hill, Chaplin, Wolfville, Woodstock, N.B.
9. Morden.
10. Rapid City, North Nicomen, Chaplin.
11. Josephsburg, Okotoks, Kneehill, High River.
12. Bruderheim, Bardo, Bismark, Heather Brae, Jumping Pound, Lacombe, Okotoks, Ponoka, Alix, Waitfield, Pekisko, Pagan, Macleod, High River, Hillsdown, Gray Hill, Lawrence, Red Willow, Bon Accord.
13. Bruderheim, Bardo, Bismark, Ponoka, Sion, Elm How, Insinger, Regina, Cartwright, Red Willow, Blackfalds, Bon Accord, Saskatoon, Regina, Moose Jaw, Gatesgarth, Chaplin, St. Albans, Almasippi.
14. Ponoka, Elm How, Insinger, Last Mountain, Regina, Rapid City, Sunnyside, Blackfalds, Moose Jaw, Gatesgarth, Alameda, Indian Head, Madoc, Percé, Woodstock, N.B., Summerside.
15. Ponoka, Elm How, Insinger, Westport, Macleod, Lawrence, Moose Jaw, Gatesgarth, Chaplin, Alameda, Indian Head, Otonabee.
16. Elm How, Insinger, Rapid City, High River, Saskatoon, Regina, Chaplin, Alameda, St. Albans, Point Clark, Sussex.
17. Sion, Point Clark, Chicoutimi.
18. Bardo, Bismark, Heather Brae, Lacombe, Sion, Croydon, Georgetown, Salmon Arm, Alix, Kneehill, Pagan, Hillsdown, Gray Hill, Red Willow, Bon Accord, Agincourt, Otonabee, Point Clark, Hamilton, Lucknow, Lake Talon, Clinton, Brome, Woodstock, N.B., Hamilton, P.E.I.
19. Sion, Sterling, Vermilion, Regina, Norquay, Aurora, Emsdale, Georgetown, Huntsville, Lansdowne, Midland, Princeton, Strathroy, Sunnyside, Westport, Westminster, Blackfalds, Bon Accord, Saskatoon, Almasippi, Agincourt, Clontarf, Haliburton, Port Hope, Madoc, Otonabee, Peterboro', Stony Creek, Point Clark, Birnam, Brantford, Hamilton, Port Burwell, Paris, Orillia, Beatrice, Owen Sound, North Bruce, Meaford, Lucknow, Lake Talon, Barrie, Brome, Wolfville, Woodstock, N.B., Bala.
20. Somas River, Sion, Sterling, Vermilion, Insinger, Regina, Cartwright, Gretna, Norquay, Rapid City, Arden, Salmon Arm, Alberni, Saskatoon, Regina, Moose Jaw, Gatesgarth, Chaplin, Indian Head, Morden, Almasippi, Point Clark, Sutton West, North Bruce, Kenora, Coquitlam, Brome.
21. Cartwright, Gretna, Norquay, Aurora, Emsdale, Georgetown, Huntsville, Midland, Princeton, North Nicomen, Indian Head, Morden, Almasippi, East Toronto, Stony Creek, Birnam, Cottam, Brantford, Hamilton, Beatrice, North Bruce, Meaford, Lucknow, Lake Talon, Barrie, Bala, Chilliwack.
22. Emsdale, Georgetown, Huntsville, Midland, East Toronto, Haliburton, Otonabee, Peterboro', Point Clark, Sutton West, Hamilton, Orillia, Beatrice, North Bruce, Lake Talon, Bruce Mines, Brome, Bala.

23. Carleton Place, Gretna, Norquay, Rapid City, Aurora, Lindsay, Georgetown, Huntsville, Midland, Strathroy, Listowel, Alameda, St. Albans, Oakbank, Morden, Mississippi, East Toronto, Agincourt, Haliburton, Otonabee, Peterboro', Stony Creek, Point Clark, Sutton West, Birkenham, Cottam, Hamilton, Port Burwell, Oshawa, Beatrice, Huntsville, Owen Sound, North Bruce, Meaford, Lucknow, Lake Talon, Clinton, Bala.

24. Insinger, Norquay, Rapid City, Lindsay, Huntsville, Lansdowne, Westminster, Pt. Esquimaux, Pelly, Big Creek, Clontarf, Haliburton, Madoc, North Gower, Otonabee, Point Clark, Sutton West, Bala, Beatrice, Huntsville, Owen Sound, North Bruce, Lucknow, Clinton, Barrie, Percé, Paspébiac, Princeton, Summerside.

25. Ponoka, Aurora, Strathroy, Westport, Salmon Arm, Clontarf, Haliburton, Point Clark, Sutton West, Bala, Huntsville, Owen Sound, North Bruce, Meaford, Lucknow, Cockburn Island, Clinton, Bruce Mines, Brome, East Pt. Sable Island, Woodstock, N. B., St. Stephen.

26. Bittern Lake, Bardo, Bismark, Jumping Pound, Sion, Arden, Midland, Tobacco Plains, Quesnelle, Alix, Whitefield, Pekisko, Paken, High River, Red Willow, East Toronto, Haliburton, Madoc, Otonabee, Peterboro', Sutton West, Port Dover, Hamilton, Orillia, Huntsville, Barrie, Brome.

27. Bittern Lake, Bardo, Bismark, Insinger, Regina, Rapid City, Tobacco Plains, Nickel Plate, Big Creek, Golden, Whitefield, Kneehill, Pekisko, Gray Hill, Red Willow, Didsbury, Regina, Alameda, Indian Head, St. Albans, North Gower, Lake Talon, Paspébiac, Percé, Pt. Lepreau.

28. Okotoks, Sion, Norquay, Rapid City, Tobacco Plains, Golden, Whitefield, Wetaskiwin, Kneehill, High River, Gray Hill, Red Willow, Moose Jaw, Gatesgarth, Chaplin, St. Albans, Oakbank, Mississippi.

29. Elm How, Cartwright, Norquay, Rapid City, Georgetown, Midland, Big Creek, Red Willow, Regina, Chaplin, Estevan, Alameda, Morden, East Toronto, Madoc, Otonabee, Peterboro', Owen Sound, North Bruce, Meaford, Clinton, Barrie, Bala.

30. Georgetown, Princeton, Summerside, Westport, Salmon Arm, Big Creek, Whitefield, Haliburton, Madoc, Otonabee, Sutton West, Hamilton, Lucknow.

FORECASTS FOR JUNE, 1907.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 1137. These were divided as follows :—

District.	No. Issued.	Verification.			Per- centage.
		No. Fully.	No. Partly.	No. Not.	
Alberta	70	62	8	0	88.6
Saskatchewan	70	65	9	1	92.7
Manitoba	55	50	12	1	86.7
Lake Superior	92	76	9	7	87.5
Lower Lake Region	116	104	11	1	91.4
Georgian Bay	116	103	8	5	92.2
Ottawa Valley	87	79	6	2	91.3
Upper St. Lawrence	87	81	5	1	96.0
Lower St. Lawrence	102	87	9	6	89.7
Gulf	102	88	7	7	89.7
Maritime Provinces (West)	105	93	10	2	93.3
Maritime Provinces (East)	105	95	10	0	90.5
Total	1137	987	104	16	91.4

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,

Meteorological Office, Toronto,
August, 1907.

Director.

DEPARTMENT OF MARINE AND FISHERIES, CANADA

METEOROLOGICAL SERVICE.

Monthly Weather Review

VOL. XXXI.

JULY, 1907

INTRODUCTION.

In compiling the present Review the principal data have been derived from telegraphic reports and observations received at this office for the purpose of comparison with the reports from the principal voluntary observers at the principal signal stations. For the purpose of giving the particulars of the high and low pressure systems which have affected the United States, we are indebted to the Weather Bureau, Washington, D.C.

REMARKS UPON THE WEATHER.

The weather on the lower mainland of British Columbia was generally warmer than usual and in some places quite high. Temperatures were occasionally recorded to have exceeded at several stations during the last third of the month. In most districts there was much bright sunshine, the weather being almost continuous from the 5th to 12th, 14th to 24th and on the last four days. The chief falls of rain occurred on or about the 3rd, 4th, 12th and 14th, and on the 24th to 26th, but the falls were mostly light and the aggregate amount was below the average. The condition of vegetation was normal. The weather on the upper mainland was similar to that in districts to the westward, excepting in the rainfall which on the contrary exceeded the average at many stations, showers occurring frequently from the 4th to 6th, and on or about the 10th, 13th, 14th, 18th, 21st, 22nd and 26th. In this portion of the province vegetation was in excellent condition on the last day of the month.

In the Western Provinces the weather was somewhat cooler than usual in most districts but at a few places in the extreme western portion of Alberta the mean temperature on the contrary was above the average. Fine weather occurred during the first and last few days of the month in Alberta, but from the 6th to 28th it was mostly dull. In Saskatchewan the dates of rainfall varied considerably. The proportion of bright sunshine of the month was below the average. During the dull period mentioned, showers were frequent, but in most localities the total precipitation was below the average. Vegetation made rapid progress during the month and on the 31st its condition was not much below normal.

The weather in Manitoba did not depart much from the normal excepting in the rainfall which varied considerably with the district, it being above the average at some places and below at others. Similar conditions regarding the dates of rainfall were noticeable, and whilst the proportion of bright sunshine recorded at Winnipeg was above the average that at other stations in the province was below. Showers, however, were frequent generally and vegetation made excellent progress.

In Ontario there was much fine bright weather, more especially from the 2nd to 5th, 13th to 19th and 27th to 31st. The chief falls of rain occurred on or about the 1st, 6th, 8th, 11th, 12th and 17th, also frequently from the 20th to 26th and on the last two days of the month. In most districts the total precipitation was below the average but at some places in the western portion of the province and in districts contiguous to Lake Superior it was excessive. The mean temperature did not depart much from the average, but in most localities the weather was cooler than usual. Owing doubtless to the frequent showers vegetation made good progress and on the 31st its condition differed little from the normal.

In the Province of Quebec the weather was comparatively cool during the first half of the month, and in the eastern portion of the province the mean temperature of the month was below the average. Elsewhere the weather was somewhat warmer throughout the month. Dull weather prevailed and rain was frequent, the total precipitation being quite excessive. A severe thunderstorm occurred at Quebec on the 20th, causing loss of life and much damage to property. Reports regarding the condition of vegetation were mostly favourable.

The weather in New Brunswick was exceedingly dull and there was little bright sunshine excepting from the 13th to 22nd, when some quite fine weather was recorded. Falls of rain though not very

frequent were heavy, they being chiefly recorded on or about the 2nd, 4th, 7th, 10th, 13th, 21st, 25th, 27th and 31st. Somewhat cool weather prevailed during the first and last week, but the mean temperature of the month departed very little from the average. Severe thunderstorms were frequent and did considerable damage to crops. Fogs were also unusually frequent in the Bay of Fundy. Vegetation was backward.

In Nova Scotia the weather was mostly cloudy with occasional rain during the first two weeks, after which it was comparatively fine, warm and dry up to the 23rd, when dull wet weather again set in and continued to the end of the month. After the 22nd the weather was quite cool and the mean temperature of the month was slightly below the average. The condition of vegetation on the 31st was normal.

The weather in Prince Edward Island was mostly dull, cool and wet the mean temperature being somewhat below the average and the rainfall above. From the 1st to 11th and 15th to 20th comparatively warm weather prevailed and vegetation made good progress. E. F. PAYNE.

ATMOSPHERIC PRESSURE.

The mean atmospheric pressure for July was above the normal over Saskatchewan, Alberta and the greater part of British Columbia, while over the remainder of the Dominion it was below. The extremes of departure from normal were $+0.07$ of an inch at Prince Albert and -0.13 of an inch at Montreal and Quebec.

HIGH AREAS.

Five areas of high pressure were charted during the month, all displaying the characteristic feebleness usually found in connection with the summer type of anticyclonic systems. They all first appeared on or in close proximity to the North Pacific States, their centres passing south of the Lake Region. Two reached the Atlantic coast but the other three dispersed before doing so.

LOW AREAS.

During the month ten areas of low pressure were sufficiently well defined to allow of their paths being accurately traced. Eight first appeared in the northwestern portion of the continent and two in the southwestern portion, all ultimately with one exception converging towards the Gulf of St. Lawrence.

The depression which appeared to the northward of Alberta on the 23rd, after reaching the Lake Region on the 25th, rapidly developed into a disturbance unusually energetic for the summer season, and as it passed down the St. Lawrence it caused gales from the Lake Region to the Maritime Provinces, when, at the same time, extraordinarily high tides were experienced in the Gulf of St. Lawrence.

TEMPERATURE.

The temperature was above the average in July over British Columbia; also very locally in the Western Provinces, Ontario and the central portion of Quebec, but over the greater portion of Canada, it was below the average. Departures from average were not pronounced except in the Gaspé Peninsula in Quebec where negative departures of 5 degrees were recorded.

The Highest and Lowest temperatures in each Province during July 1907, were :

British Columbia,	16° on 20th at Kitamaat,	31° on 7th at Stuart's Lake.
Alberta,	92° on 31st at Lawrence,	28° on 5th at Lawrence
	92° on 28th at Medicine Hat.	
Saskatchewan,	87° on 5th and 12th at Regina,	37° on 29th at Broadview,
		37° on 7th at Chaplin.
Manitoba,	98° on 12th at Birtle,	34° on 1st at Treherne.
Ontario,	98° on 9th at Point Clark,	31° on 2nd at White River.
Quebec,	90° on 19th at Chicoutimi,	35° on 26th at Abitibi.
New Brunswick,	90° on 17th at Chatham,	44° on 11th at St. Stephen.
Nova Scotia,	88° on 17th at Port Hastings,	40° on 15th at Sydney.
P. E. Island,	83° on 20th at Charlottetown,	48° on 15th at Hamilton.

PRECIPITATION.

An excess of precipitation was recorded over large sections of British Columbia, Manitoba, Ontario, Quebec and the Maritime Provinces, whereas the remaining portions of Canada shewed a deficiency in the rainfall. Departures from normal were very marked, positive differences being a

high as 95 per cent in the Gaspé Peninsula of Quebec as well as in northern New Brunswick, and negative departures of from 40 to 50 per cent were recorded in the southern portions of Alberta and Saskatchewan.

BRIGHT SUNSHINE.

The amount of bright sunshine recorded during July was in excess of the average over the greater portion of Canada, negative departures being only recorded in parts of Quebec, the Maritime Provinces and Manitoba. The largest positive departure was 16% at Toronto, Ont., and the largest negative departure 35% at Fredericton, N.B.

WINDS.

In British Columbia, on Vancouver Island, and over the mainland, the direction was chiefly southerly to westerly, with two days with strong and eight with fresh breezes.

In Alberta and Saskatchewan the westerly direction slightly predominated, with ten days with strong and nine with fresh breezes.

In Manitoba the direction was largely westerly with ten days strong and fourteen with fresh breezes.

In the Lake Region the direction was often variable, favouring slightly the south and west, with seven days with strong and ten with fresh breezes and one gale.

In the Ottawa and Upper St. Lawrence Valleys the south and west directions generally prevailed, with three days with strong and seven with fresh breezes and one gale.

In the Lower St. Lawrence Valley and the Gulf the direction was variable, the easterly, however, being often in evidence. There were nine days with strong and eleven days with fresh breezes and one gale.

In the Maritime Provinces the direction was variable with five days strong and eight with fresh breezes and one gale.

The gale which was experienced from the Lake Region to the Maritime Provinces occurred on the 26th instant, and in the Gulf of St. Lawrence it was attended by an unusually high tide. Warnings were issued for the gale in all the districts affected, but in the Lake Region, in several localities, it was not received before the storm had begun.

ALBERTA—
Athabasca Landing.

ALBERTA—		SASKATCHEWAN—		MANITOBA—		ONTARIO—		QUEBEC—		NEW BRUNSWICK—		NOVA SCOTIA—		PELTON—		BRITISH COLUMBIA—		YUKON—		NORTHWEST TERRITORIES—		
Station	Altitude	Station	Altitude	Station	Altitude	Station	Altitude	Station	Altitude	Station	Altitude	Station	Altitude	Station	Altitude	Station	Altitude	Station	Altitude	Station	Altitude	
Albion Landing	54	43 113 17	1630	Albion Landing	54	43 113 17	1630	Albion Landing	54	43 113 17	1630	Albion Landing	54	43 113 17	1630	Albion Landing	54	43 113 17	1630	Albion Landing	54	43 113 17
Albion	52	24 113 10	1512	Albion	52	24 113 10	1512	Albion	52	24 113 10	1512	Albion	52	24 113 10	1512	Albion	52	24 113 10	1512	Albion	52	24 113 10
Blackfalds	32	24 113 13	1512	Blackfalds	32	24 113 13	1512	Blackfalds	32	24 113 13	1512	Blackfalds	32	24 113 13	1512	Blackfalds	32	24 113 13	1512	Blackfalds	32	24 113 13
Bon Accord	32	33 113 21	1576	Bon Accord	32	33 113 21	1576	Bon Accord	32	33 113 21	1576	Bon Accord	32	33 113 21	1576	Bon Accord	32	33 113 21	1576	Bon Accord	32	33 113 21
Calgary	51	24 111 1	1380	Calgary	51	24 111 1	1380	Calgary	51	24 111 1	1380	Calgary	51	24 111 1	1380	Calgary	51	24 111 1	1380	Calgary	51	24 111 1
Cardston	19	12 113 18	1394	Cardston	19	12 113 18	1394	Cardston	19	12 113 18	1394	Cardston	19	12 113 18	1394	Cardston	19	12 113 18	1394	Cardston	19	12 113 18
Didsbury	35	36 113 35	1512	Didsbury	35	36 113 35	1512	Didsbury	35	36 113 35	1512	Didsbury	35	36 113 35	1512	Didsbury	35	36 113 35	1512	Didsbury	35	36 113 35
Edmonton	32	33 113 30	1512	Edmonton	32	33 113 30	1512	Edmonton	32	33 113 30	1512	Edmonton	32	33 113 30	1512	Edmonton	32	33 113 30	1512	Edmonton	32	33 113 30
Gray Hill	32	13 113 35	1576	Gray Hill	32	13 113 35	1576	Gray Hill	32	13 113 35	1576	Gray Hill	32	13 113 35	1576	Gray Hill	32	13 113 35	1576	Gray Hill	32	13 113 35
Hillsdown	32	11 113 29	1562	Hillsdown	32	11 113 29	1562	Hillsdown	32	11 113 29	1562	Hillsdown	32	11 113 29	1562	Hillsdown	32	11 113 29	1562	Hillsdown	32	11 113 29
High River	30	35 113 35	1594	High River	30	35 113 35	1594	High River	30	35 113 35	1594	High River	30	35 113 35	1594	High River	30	35 113 35	1594	High River	30	35 113 35
Kneehill	31	31 113 35	1594	Kneehill	31	31 113 35	1594	Kneehill	31	31 113 35	1594	Kneehill	31	31 113 35	1594	Kneehill	31	31 113 35	1594	Kneehill	31	31 113 35
Letbridge	19	12 112 31	1512	Letbridge	19	12 112 31	1512	Letbridge	19	12 112 31	1512	Letbridge	19	12 112 31	1512	Letbridge	19	12 112 31	1512	Letbridge	19	12 112 31
Medicine Hat	19	11 113 37	1512	Medicine Hat	19	11 113 37	1512	Medicine Hat	19	11 113 37	1512	Medicine Hat	19	11 113 37	1512	Medicine Hat	19	11 113 37	1512	Medicine Hat	19	11 113 37
Macleod	19	11 113 31	1512	Macleod	19	11 113 31	1512	Macleod	19	11 113 31	1512	Macleod	19	11 113 31	1512	Macleod	19	11 113 31	1512	Macleod	19	11 113 31
Nanton	30	18 113 25	1500	Nanton	30																	

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, JULY, 1967.

of bacteria and their resistance to antibiotics.

[illegible]

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, JULY, 1907.

a Barometer not reduced to sea level. * Stations not furnished with registering thermometer.

STATION.	Latitude N.	Longitude W.	Pressure			Temperature.					Mean temperature of month.			Duration of wind from			Velocity of wind.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
			Mean reduced.	Highest.	Lowest.	High.	Low.	Mean.	From average.	From absolute.	Daily range.	Mean relative humidity.	Mean amount of cloud.	No. of days completely clouded.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	No. of days.	No. of days.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
NOVA SCOTIA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Bridgetown	43 49	65 36	29.65	29.95	29.35	4.4	3.6	5.2	1.3	3.3	1.7	75	13	6	7	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	11	2	1	10	

PRECIPITATION AT STATIONS REPORTING RAIN OR SNOW DURING JULY, 1907.

		RAINFALL.			SNOW.			
STATION.	A.	No. of Days, 0.1 and Over.	No. of Days.	Highest Fall in Month.	Days.	Avg. Depth in In.	Days.	REMARKS.
BRITISH COLUMBIA—								
Copitlam ..				0.0				
Denman Island ..		3	25	0.84	2			Fog 1st, 2d, 3d, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, 21st, 22nd, 23rd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, 31st.
Goldstream Lake ..		3	28	0.8	3			
Hartley Bay ..		3	26	1.04	27			
Nanaimo Harbor ..		11	20	0.37	1			
Nanaimo ..		1	19	0.64	1			
Royal Oak ..		3	28	0.3	2			
Sonoma River ..	1.07	2	27	0.84	3			Thunder 2nd.
Swanson Bay ..	1.7	9	22	1.21	1			
ALBERTA—								
Bardo ..	2.4	6	25	0.78	21			Thunder 11th.
Beaver Hills, W. ..	2.4	11	20	0.79	10			Thunder 10th, 11, 16, 21.
Bismark ..	2.8	9	21	0.48	11			Thunder 11th.
Bruderheim ..	1.74	9	22	0.55	11			Thunder 11th, 12, 18, Aurora 25th, 27, 28.
Bittern Lake ..	2.2	12	19	0.8	21			Thunder 10th.
Canby ..	2.00	5	23	1.00	10			
Clover Bar ..	1.8	3	27	0.60	23			
Conjuring Creek ..	1.71	3	24	0.75	4			
Dorence ..	1.94	8	20	0.85	21			
Grassy Lake ..	0.1	2	20	0.20	11, 11			
Heather Brae ..	1.98	13	17	0.36	24			Thunder 11th.
Islay ..								
Innisfail ..								
Josephburg ..	1.78	6	25	0.20	17			Thunder 3rd, 11, 17, 25, 31.
Jumping Pound ..	1.41	12	18	0.33	24			Thunder 8th, 18, 21, 22, 23, 26.
Lacombe ..	1.14	7	20	1.00	18			Thunder 10th.
Leavings ..	1.27	5	35	0.50	3			Thunder 10th, 8, 9, 11, 12.
Macleod ..	0.22	4	27	0.11	10			
Magrath ..	0.19	4	27	0.18	15			
Mayton ..	2.63	4	26	1.43	8			
Morinville ..	1.83	6	25	0.50	17			
Okotoks ..	1.20	10	18	0.21	11			Thunder 9, 10, 12, 25.
Ponoka ..	2.21	8	20	0.66	12			Fog 10th, 20.
Sion ..	2.11	17	12	0.15	12			Thunder 8th, 11, 12.
Stirling ..								
Saddle Lake ..	2.08	5	22	1.04	13			Thunder 10th.
Vermilion ..	1.25	8	20	0.26	13			Thunder 8th, 11.
Wabamun ..	2.50	16	13	0.71	10			Thunder 10th.
SASKATCHEWAN—								
Arcola ..	0.34	3	28	0.14	20			
Elm How ..	2.34	7	20	0.85	22			Thunder 11th, 20, 22.
Hanley ..	2.12	9	20	0.80	25			
Ininger ..	1.75	9	20	0.61	24			Thunder 2nd, 3, 4, 10, 18, 22, 23, 24, 28, 31.
Last Mountain ..	2.56	12	19	0.26	13			Thunder 26th.
Regina ..								
MANITOBA—								
Beaver ..	2.63	11	18	0.52	21			
Cartwright ..	2.57	14	14	0.55	13			Thunder 3rd, 15, 21, 31, Aurora 10th.
Gretna ..	2.04	7	24	0.65	13			Thunder 6th, 13.
Norquay ..	2.50	10	18	0.57	5			Thunder 3rd, 5, 6, 16, 19, 24, 25, 29.
Rapid City ..	2.60	10	20	0.50	22			Thunder 2nd, 3, 4, 6, 19, 20, 22, 31.
Rosebank ..								
ONTARIO—								
Aurora ..	2.09	9	20	0.48	31			Thunder 6th, 25, 31.
Arden ..	2.24	12	19	0.46	4			Thunder 1st, 7, 17, 21.
Croydon ..	1.45	6	25	0.34	12			Thunder 8th, 12, 26, 29, 30.
Deer Park ..	1.79	6	24	0.50	25			
Dutton ..	1.28	6	24	1.20	8			
Ennisdale ..	2.51	11	18	0.84	21			Thunder 6th, 12, 23, 26, 29.
Ennismore ..	0.60	3	28	0.35	8			
Goderich ..	1.06	3	28	0.50	25			
Georgetown ..	1.84	8	20	0.57	22			Thunder 1st, 6, 22, 24, 26, 26, Aurora 10th, 27.
Huntsville ..	1.44	5	25	0.68	22			Thunder 20, 26, Aurora 10.
Lansdowne ..	0.34	3	27	0.39	12			Thunder 7th, 8, 20, 21, 29.
MacCue ..	2.40	5	26	0.80	20			
Midland ..	1.00	6	23	0.38	11			Thunder 1st, 8, 25.
Montague ..	2.33	6	25	0.78	20			
Orangeville ..	1.81	4	26	0.82	1			
Princeton ..	2.98	5	25	0.82	11			Thunder 1st, 21, 26.
Sydenham ..	1.63	4	27	0.50	20			
Strathroy ..	2.73	8	22	0.88	24			Thunder 17th, 21, 26.
Watford ..	2.89	7	24	0.80	11			
Westport ..	1.65	8	23	0.40	20			Thunder 1st, 6, 8, 20, 24, 29.
Wooler ..	2.91	11	20	0.50	20			Thunder 8th, 20, 24, 25, 31.
Westminster ..	2.58	5	25	0.93	11			Thunder 21th, 25.
Warton ..	0.45	4	25	0.23	11			Thunder 8th, 24.
NEW BRUNSWICK—								
Point Escuminac ..	6.02	11	11	0.96	21			Fog 1st, 18, 19, 28, 31.

FIGURE 10. — SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF JULY 1907.

STATION.	HOURS EXPOSURE.															
	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	2 p.m.	3 p.m.	4 p.m.
Vancouver	0.00	0.10	0.40	0.73	0.74	0.81	0.91	0.94	0.90	0.87	0.81	0.82	0.81	0.73	0.52	
Nanaimo	0.00	0.10	0.74	0.84	0.89	0.88	0.86	0.91	0.84	0.90	0.77	0.79	0.80	0.74	0.64	
Alexander	0.00	0.00	0.11	0.42	0.46	0.66	0.70	0.77	0.74	0.77	0.82	0.68	0.50	0.45	0.40	
Kootenai	0.00	0.45	0.67	0.76	0.81	0.83	0.87	0.82	0.81	0.78	0.80	0.60	0.57	0.53	0.39	
St. John's																
Calgary	0.04	0.20	0.61	0.67	0.74	0.74	0.76	0.78	0.77	0.74	0.66	0.68	0.45	0.20	0.41	0.05
Medicine Hat																
Edmonton	0.03	0.45	0.64	0.72	0.74	0.74	0.68	0.62	0.68	0.70	0.78	0.75	0.74	0.72	0.47	0.05
Regina																
Indian Head	0.00	0.08	0.49	0.64	0.64	0.67	0.68	0.70	0.71	0.63	0.63	0.63	0.66	0.57	0.41	
Brandon	0.00	0.00	0.24	0.60	0.83	0.84	0.86	0.79	0.81	0.77	0.71	0.66	0.67	0.46	0.41	
Winnipeg	0.00	0.39	0.61	0.72	0.78	0.89	0.95	0.86	0.82	0.80	0.81	0.80	0.74	0.54	0.27	
Woodstock		0.10	0.57	0.76	0.82	0.83	0.86	0.72	0.73	0.80	0.78	0.68	0.60	0.56	0.32	
Toronto		0.01	0.46	0.63	0.68	0.81	0.78	0.82	0.80	0.81	0.83	0.80	0.70	0.58	0.02	
Lindsay	0.01	0.23	0.35	0.43	0.57	0.64	0.68	0.67	0.63	0.73	0.75	0.72	0.68	0.71	0.63	0.25
Barrie		0.30	0.48	0.33	0.68	0.68	0.75	0.73	0.83	0.84	0.79	0.77	0.77	0.62	0.28	0.01
Gravenhurst		0.15	0.30	0.35	0.61	0.65	0.69	0.69	0.75	0.75	0.77	0.73	0.68	0.37	0.14	0.00
Haliburton	0.02	0.23	0.45	0.55	0.64	0.61	0.63	0.58	0.57	0.54	0.49	0.56	0.53	0.58	0.52	0.04
Kingston	0.00	0.12	0.60	0.72	0.72	0.69	0.72	0.73	0.73	0.68	0.65	0.66	0.63	0.45	0.19	
Ottawa		0.06	0.40	0.61	0.60	0.72	0.73	0.75	0.72	0.69	0.61	0.61	0.53	0.38	0.00	
Montreal		0.08	0.45	0.48	0.54	0.58	0.64	0.67	0.73	0.67	0.68	0.59	0.55	0.39	0.04	
Sherbrooke	0.00	0.36	0.49	0.54	0.60	0.64	0.71	0.68	0.66	0.62	0.65	0.66	0.60	0.52	0.20	
Quebec		0.10	0.33	0.41	0.49	0.53	0.60	0.60	0.64	0.65	0.54	0.52	0.48	0.46	0.15	
Fredericton		0.06	0.24	0.30	0.35	0.39	0.39	0.49	0.54	0.50	0.50	0.46	0.49	0.40	0.26	0.01
Charlottetown	0.01	0.12	0.24	0.30	0.29	0.36	0.41	0.45	0.50	0.50	0.50	0.49	0.45	0.43	0.15	

	Victoria	Nanaimo	Alexander	Kamloops	Savona's	Calgary	Medicine Hat	Edmonton	Regina	Indian Head	Brandon	Winnipeg	Woodstock	Toronto	Lindsay	Barrie	Gravenhurst	Haliburton	Kingston	Ottawa	Montreal	Sherbrooke	Quebec	Fredericton	Charlottetown
Mean proportion for month Constant sunshine being 1	0.60	0.70	0.47	0.61	—	0.57	0.58	—	—	0.49	0.53	0.64	0.61	0.58	0.57	0.60	0.52	0.49	0.57	0.50	0.46	0.53	0.41	0.35	0.34
Difference from average	0.07	—	0.03	—	—	—	—	—	—	-0.06	-0.03	+0.08	+0.08	+0.08	0.00	-0.04	—	—	0.00	0.02	0.13	—	—	0.19	—
Maximum daily amount	0.82	0.89	0.70	0.84	—	0.91	0.86	—	—	0.77	0.76	0.86	0.86	0.79	0.66	0.92	0.81	0.70	0.89	0.85	0.81	0.91	0.80	0.88	0.86
Date of first appearance	7-9	7	7	8	20	1	30	—	—	5	30	9	10	9	10	13	9	9	27	18	13	21	21	14	3
No. of days completely clouded	0	0	2	2	—	2	1	—	—	0	0	1	1	1	1	2	3	0	2	2	3	1	3	6	3

Aurora recorded :

Where the class of aurora is noted by the observer, it is given, (I the best, (II) the next, (III) the next, (IV) the feeblest in brilliancy.

1. St. Albans, II.
5. Bruce Mines, Chaplin, Waitefield, III.
6. Grenfell, II ; Waitefield, IV.
8. Gray Hill, Waitefield, IV ; Knee Hill.
9. Waitefield, IV.
10. Woodstock, N.B., Hamilton, Brantford, IV ; Lake Talon, St. Albans, II ; Grenfell, I ; Fox-leigh, Chaplin, Waitefield, III ; Cartwright, Georgetown.
11. Estevan.
17. St. Albans, IV.
21. Gray Hill, IV ; Bruderheim.
27. Haliburton, Hamilton, Lake Talon, Bruce Mines, Owen Sound, Lucknow, II ; Treherne, St. Albans, II ; Chaplin, Waitefield, I ; Pakan, III ; Salmon Arm, Summerland, Denman Island, Bruderheim, Georgetown.
28. Paspebiac, IV ; St. Albans, II ; Waitefield, I ; Bruderheim.
31. Chaplin.

Thunder recorded on :

1. Arden, Georgetown, Midland, Princeton, Westport, Madoc, Brantford, Birman, Peterboro', Agincourt, Lake Talon, Sutton, Waitefield, Bon Accord, Big Creek.
2. Denman Isld., Somas River, Insinger, Rapid City, Summerside, Brome, Sutton, St. Albans, Ladner.
3. Josephburg, Insinger, Cartwright, Norquay, Rapid City, Kenora, Moncton, St. Albans, Fox-leigh, Regina, Estevan, Macleod, Tobacco Plains, Salmon Arm, Summerland, Princeton, Rossland, North Nicomen, Ladner, Tzouhalem, Big Creek.
4. Heather Brae, Insinger, Rapid City, Wolfville, Regina, Estevan, Red Willow, Rossland.
5. Gretna, Norquay, Woodstock, N.B., St. Stephen, Brome, Paspebiac, Otonabee, North Gower, Oakbank, Pekisko.
6. Leavings, Norquay, Rapid City, Aurora, Emsdale, Georgetown, Westport, Paspebiac, Hamilton, Madoc, Agincourt, East Toronto, Stony Creek, Lake Talon, Orillia, Grenfell, Estevan, Tobacco Plains.
7. Arden, Lansdowne, Summerside, Pt. Lepreaux, St. Stephen, Port Dover, Kenora, Sutton, Meaford.
8. Jumping Pound, Leavings, Sion, Vermilion, Croydon, Lansdowne, Midland, Westport, Wooler, Warton, Pt. Lepreaux, Brome, Madoc, Brantford, North Gower, Peterboro', Port Dover, Port Hope, Agincourt, East Toronto, Lake Talon, Owen Sound, Sutton, Orillia, Waitefield, Bon Accord, Kneehill, Red Willow.
9. Leavings, Summerside, Pt. Lepreaux, St. Stephen, Brome, Chicoutimi, Paspebiac, Sutton, Moncton, Lloydminster, Waitefield, Bon Accord, Tobacco Plains.
10. Beaver Hills W, Bittern Lake, Okotoks, Saddle Lake, Wabamun, Wolfville, High River, Waitefield, Wetaskiwin, Blackfalds, Bon Accord, Kneehill, Pakan, Pekisko, Tobacco Plains.
11. Bardo, Beaver Hills W, Bismark, Bruderheim, Elm How, Josephburg, Lacombe, Leavings, Sion, Vermilion, Insinger, Lake Talon, Regina, Lloydminster, Estevan, Gray Hill, Waitefield, Wetaskiwin, Bon Accord, Kneehill, Pakan, Red Willow, Salmon Arm.
12. Bruderheim, Leavings, Okotoks, Sion, Croydon, Emsdale, Summerside, Beatrice, Madoc, Estevan, High River, Bon Accord, Tobacco Plains.
13. Gretna, Bathurst, Kenora, Oakbank, High River, Big Creek.
14. Waitefield, Bon Accord, Salmon Arm, Nickel Plate, Princeton, Rossland, Nicola.
15. Cartwright, Oakbank, Salmon Arm, Princeton, Rossland, Big Creek, Nicola, Bella Coola, Alberni.
16. Beaver Hills W, Norquay, Otonabee, Meota, Tobacco Plains, Salmon Arm, Big Creek, Nicola.
17. Josephburg, Arden, Strathroy, Summerside, Birnam, Lloydminster, Alix, Hillsdown, Pakan.
18. Bruderheim, Jumping Pound, Insinger, Oakdale Park, Gray Hill, Waitefield, Blackfalds, Bon Accord, Red Willow, Princeton, Rossland.
19. Insinger, Norquay, Rapid City, Bruce Mines, St. Albans, Humboldt, Regina, Estevan, Blackfalds.

The number of predictions issued during the month was 1316. These were divided as follows:—

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

Meteorological Office, Toronto,
4th September, 1907.

DEPARTMENT OF MARINE AND FISHERIES, CANADA.

METEOROLOGICAL SERVICE.

Monthly Weather Review.

VOL. XXXI.

AUGUST, 1907.

No. 8.

INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

REMARKS UPON THE WEATHER.

A marked excess of precipitation and a very general subnormal temperature marked the weather of August throughout the greater portion of British Columbia, the only exception being in the southern part of Vancouver Island, where the precipitation was somewhat deficient and the temperature a little higher than average. The continued rains delayed the harvest somewhat. Maximum temperatures exceeding 90° were recorded at many stations, occurring at most places during the first three days.

Throughout the Western Provinces conditions were cool, and on a few occasions frost was recorded at many places. The rainfall was heavy except in Southwestern Alberta where a subnormal amount was recorded. Harvesting was well under way by the end of the month.

In Ontario fine weather predominated and the rainfall was light. The second week of the month was generally warm but otherwise conditions were cool. Pastures and root crops were much affected by drought, but the dry weather allowed the harvesting of grain in excellent condition.

In the western portion of Quebec, conditions were much the same as in Ontario, but over eastern districts, the rainfall was excessive and the weather cool.

Much cloudy, wet, cool weather prevailed during August throughout the Maritime Provinces and in consequence vegetation though of rank growth was not approaching maturity. Light local frosts were recorded in Cape Breton Island on the 22nd.

ATMOSPHERIC PRESSURE.

The mean atmospheric pressure for August was subnormal throughout Canada except in Eastern Ontario, locally along Lake Huron, and over the Coast and northern districts of British Columbia where a slightly supernormal value was registered.

HIGH AREAS.

Seven areas of high pressure were charted during the month, three first appeared on the Pacific Coast well to the northward of British Columbia, two on the North Pacific United States coast and two apparently originated in the Upper Lake Region. The areas assumed the usual feeble summer type and their drift was over the Lake Region, whence some drew southwards and dispersed and others passed off either the New England or the Middle Atlantic Coasts.

LOW AREAS.

Eight areas of low pressure were sufficiently well defined to be charted. Their tracks were with one exception over the Western Provinces, thence almost in a straight line to the northern portion of the Gulf of St. Lawrence, passing far to the northward of the Lake Region and the Ottawa and St. Lawrence Valleys. The depression which deviated from the general course appeared over North Carolina and thence travelled over the Maritime Provinces into the northern portion of the Gulf of St. Lawrence. It was, however, of feeble energy as were several of those taking the northern path.

WINDS.

In British Columbia, in Vancouver and on the mainland the direction was chiefly southerly to westerly with six days with strong and eleven with fresh breezes.

In Alberta and Saskatchewan, the westerly direction slightly predominated with eleven days with strong and ten with fresh breezes and two gales.

In Manitoba the south and west winds were the most in evidence although the easterly was also well marked. There were ten days with strong and eight with fresh breezes and three gales.

In the Lake Region the direction was variable. On six days strong breezes were experienced and on nine the winds were fresh; at other times they were either light or moderate.

In the Ottawa and Upper St. Lawrence Valleys the direction was more or less variable but favouring the westerly with five days with strong and seven with fresh breezes.

In the Lower St. Lawrence Valley and the Gulf the south and west directions were the most general with ten days with strong and eleven with fresh breezes.

In the Maritime Provinces the south and west directions prevailed generally with seven days with strong and ten with fresh breezes. During the month there were a few local high winds or thunder-squalls from Ontario to the Maritime Provinces but no general gales. No warnings were issued.

TEMPERATURE.

A subnormal mean temperature was recorded throughout Canada during August, except in Southern Vancouver Island, the County of Essex and along the west shores of the Georgian Bay in Ontario, and also very locally in Quebec, where the average was slightly exceeded. Negative departures were however not excessive excepting in Alberta and Northern British Columbia where a deficiency of from 4 to 6 degrees occurred.

The Highest and Lowest temperatures in each Province during August 1907, were :

British Columbia,	98° ·3 on 1st at Alberni,	22° ·0 on 30th at Nickle Plate.
Alberta,	90° ·6 on 25th at Lethbridge,	26° ·5 on 19th at Red Willow
Saskatchewan,	94° ·0 on 13th at Meota, and on 8th at Swift Current,	28° ·0 on 21st at Kamsack.
Manitoba,	98° ·0 on 9th at Pipestone,	23° ·0 on 21st at Carberry.
Ontario,	99° ·0 on 9th at Point Clark,	24° ·0 on 16th at Clontarf.
Quebec,	87° ·9 on 11th at Montreal,	30° ·0 on 28th at Brome.
New Brunswick,	87° ·0 on 13th at Chatham,	36° ·0 on 23rd at Sussex.
Nova Scotia,	84° ·0 on 14th at Wolfville,	36° ·4 on 23rd at Sydney.
P. E. Island,	77° ·0 on 6th at Charlottetown, and on 14th at Hamilton,	46° ·0 on 19th at Summerside.

PRECIPITATION.

In the southern portions of Vancouver Island and on the Lower Mainland the rainfall was very light, less than half the average amount in many localities. In other parts of British Columbia it was nearly everywhere much in excess of the average, Cariboo recording nearly three times the usual quantity. In the Western Provinces and east as far as Lake Superior with the exception of a few localities in Southern Alberta, the rainfall was also remarkably heavy, the positive departures being equivalent to over 100 per cent at Edmonton, Swift Current and Regina; 52 per cent at Prince Albert, 57 per cent at Minnedosa, and 89 per cent at Port Arthur. The Peninsula of Ontario and the Ottawa and Upper St. Lawrence Valleys, on the other hand, suffered from the lack of rain, the drought being severely felt in nearly all the districts, the deficiency of rainfall varying from 50 to 76 per cent. In the Western portion of the Province of Quebec the rainfall was also exceedingly

light but eastward it increased steadily, reaching the average amount a little below Quebec City and exceeding it by 18 to 28 per cent in the Gaspé Peninsula; much rain also fell over the Maritime Provinces the excess from the usual quantity varying from 3 per cent in Prince Edward Island to 36 and 38 per cent in parts of Nova Scotia.

BRIGHT SUNSHINE.

A supernormal value of the mean proportion of bright sunshine for August was registered in Ontario, whilst elsewhere in Canada the amount was subnormal. The extremes of departure from average were—12 per cent of the possible amount at Winnipeg, Man., and +5 per cent at Kingston, Ont., and the maximum daily amount, 97 per cent was registered at Lindsay, Ont., on the 22nd.

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA AUGUST, 1907

a Barometer not reduced to Sea Level. * Stations not furnished with Registering Thermometers.

STATION.	Latitude N.	Longitude W.	Pressure.			Temperature.			Direction of Wind from.										Velocity of Wind.		Remarks.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
			Feet above level in foot.	Mean reduced.	Highest.	Lowest.	Range.	Mean.	Difference from average.	Highest.	Date.	Lowest.	Date.	Mean daily range.	Mean temperature of day.	Mean relative humidity.	Mean amount of cloud.	No. of days completely clouded.	Direction of Wind from.								Total number of observations.	Mean velocity.	Direction.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
																			N.	N.E.		E.	S.E.	S.W.	W.	N.W.				C.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
British Columbia																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							</

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA, AUGUST, 1907.

a Barometer not reduced to Sea Level. * Stations not furnished with Registering Thermometers.

STATION.	Latitude N.	Longitude W.	Pressure.			Temperature.				Direction of wind from.										Velocity of wind.			Precipitation.			Remarks.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
			Mean reduced.	Highest.	Lowest.	Range.	Mean.	Difference from average.	Hours above 10.	Highest.	Bar.	Lowest.	Daily range.	Mean daily range.	Mean temperature of dew point.	Mean relative humidity.	Mean amount of cloud.	No. of days completely clouded.	N.					S.W.					W.	N.W.	Obs. number.	Force in m.p.h.	Force in m.p.h.	Force in m.p.h.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
																			N.	N.E.	S.	S.W.	W.	N.W.	N.		N.E.	S.							S.W.	W.	N.W.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
MANITOBA CON.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
Oakbank.	49 57	96 42	740				30	16	62	74	33	30	4	4	36	33	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3

SCENARIO—Concluded.

Stratford	62	23	31	0	1191	63	4	1	6	37	86	0	11	41	0	21	22	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-----------	----	----	----	---	------	----	---	---	---	----	----	---	----	----	---	----	----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

2015

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antidoti	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, E. Point,	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, S. W. Point,	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, W. Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, W. Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, W. Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, W. Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, W. Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, W. Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, W. Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, W. Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, W. Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, W. Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, W. Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, W. Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, W. Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
Antrostol, W. Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50																																																		

NEW HURSWICK-

[illegible]

PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c., DURING AUGUST 1907.

STATION.	RAIN FALL.				SNOW FALL.				REMARKS.
	Amount in inches.	No. of Days, 01. or Over.	No. of Fair Days.	Heavyest Fall in Month.	Date.	Amount in inches.	No. of Days, 01. or Over.	Heavyest Fall in Month.	Date.
BRITISH COLUMBIA—									
Copitham ..									
Denman Island	1.41	8	23	0.47	11				
Goldstream Lake	0.65	9	22	0.25	7, 24				
Hartley Bay	1.41	11	20	0.40	22				
Naas Harbour	7.68	16	15	1.33	27				
Nanaimo	0.33	3	26	0.31	6				
Royal Oak	0.35	3	28	0.26	25				
Swanson Bay	7.86	19	12	1.95	12				
Sonias River	0.36	5	26	0.18	25				Thunder 25th.
ALBERTA—									
Bardo	1.68	6	23	1.20	26				
Beaver Hills, W.	1.64	8	17	1.61	26				White frost 19th, 31st.
Bismark	3.99	12	18	1.03	25				Thunder 19th, 7.
Bruderheim	2.30	8	22	1.70	26				
Bittern Lake	7.32	11	20	1.23	14				Thunder 7th, 11, 13, 14. An-
Conits	0.50	6	25	0.20	30				tona 19th, 30. Frost 31st.
Clover Bar	3.25	4	26	1.20	25				Thunder 2nd.
Conjuring Creek	5.08	6	21	2.22	26				
Dorcnlee	4.63	8	20	1.88	18				
Grassy Lake	0.20	1	30	0.20	9				
Heather Brae	5.14	13	18	1.28	26				Frost 31st.
Islay									
Innisfail									
Josephburg	1.53	8	23	0.38	14				
Jumping Pound	4.97	11	16	1.64	5				Thunder 5th, 11. Trace of
Kimball	1.74	8	21	0.44	9				snow on 17th.
Lacombe	4.10	5	23	1.79	25				Thunder 19th, 19.
Leavings	2.27	7	24	0.70	8				
Macleod	5.62	9	20	0.70	9				Thunder 2nd, 5, 10, 14, 24.
Magrath	1.03	8	23	0.34	25				Frost 18th.
Mayton	3.75	4	26	1.56	26				
Morinville	2.85	5	26	0.75	18				
Okotoks	3.30	12	13	1.46	10				Thunder 2nd, 3, 5, 10, 14, 14
Ponoka	4.65	4	22	1.89	18				Ice 14th on 19th.
Sion	3.43	17	13	1.18	25				Aurora 1st, 30, 31.
Stirling									
Saddle Lake	4.94	4	27	2.06	15				
Vermilion									
Wabamun	4.20	8	20	1.46	25				Frost 19th.
SASKATCHEWAN—									
Arcola	2.44	7	24	0.98	11				
Elm How	5.24	8	23	0.95	30				Thunder 5th, 8.
Hailey	2.08	7	22	0.26	15				Slight frost on 1st.
Hsinger	2.29	7	23	0.73	26				Hard frost 29th.
Last Mountain	5.18	10	20	2.33	31				Thunder 8th, 13.
Regina									
MANITOBA—									
Beaver	5.84	11	20	1.92	11				
Cartwright	3.83	7	23	1.05	25				
Gretna	2.23	6	23	0.65	26				Thunder 10th, 14. White
Norquay	2.83	10	21	1.15	11				frost 3rd, 20, 21.
Rapid City	5.56	11	20	3.25	10				Thunder 5th, 6, 8, 9, 11, 14,
Rosebank									15, 25, 31.
ONTARIO—									
Aurora	0.88	3	28	0.30	16				Thunder 1st.
Arden	1.28	7	20	0.51	17				Thunder 2nd, 8, 13, 17.
Croydon	0.95	5	26	0.30	25				Thunder 7th.
Deer Park	1.12	3	28	0.70	2				Thunder 2nd, 15.
Dutton	1.36	3	27	0.55	3				Thunder 17th.
Emsdale	1.57	8	12	0.33	17				Thunder 18, 7, 24.
Ennismore	1.89	4	27	1.10	16				Thunder 1th.
Goderich	0.31	3	28	0.20	27				
Georgetown	1.04	5	23	0.30	2				Thunder 1st, 2, 16.
Huntsville	1.93	6	25	0.52	16				Thunder 7th, 16, 21.
Lansdowne	0.59	1	26	0.50	1				Thunder 1th.
MacCue	2.07	6	24	0.86	26				
Midland	1.28	6	25	0.46	26				Thunder 2nd.
Montague	0.25	3	28	0.18	30				
Orangeville	0.97	3	20	0.51	16				
Princeton	0.70	3	28	0.35	16				
Sydenham	3.32	6	25	2.15	7				
Syrathroy	1.40	5	26	0.49	3				Thunder 16th. Hail-storm 1-7
Watford	1.46	5	26	0.80	16				
Westport	1.41	3	28	1.27	7				Thunder 7th.
Wooler	1.06	3	28	0.66	16				Thunder 7th.
Westminster	0.32	1	27	0.32	3				Thunder 1st.
Warton	0.38	8	23	0.23	16				Thunder 16th.
NEW BRUNSWICK—									
Point Escuminac	6.06	12	18	3.41	25				Thunder 13th, 18.

66901110—01—001 SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF AUGUST 1907.

STATION	Hours of Day															
	A.M.								P.M.							
	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9
N. York	0.00	0.24	0.41	0.57	0.66	0.71	0.70	0.59	—	—	—	—	0.65	0.64	0.49	0.04
Ag.	0.00	0.49	0.57	0.60	0.63	0.71	0.67	0.59	—	—	—	—	0.62	0.62	0.64	0.49
R. York	0.00	0.00	0.25	0.42	0.43	0.41	0.49	0.46	0.31	—	—	—	0.47	0.59	0.46	0.03
St. Catharines	0.11	0.43	0.46	0.46	0.60	0.58	0.64	0.63	0.57	—	—	—	0.43	0.41	0.33	0.07
Calg.	0.24	0.44	0.40	0.38	0.61	0.65	0.62	0.63	0.60	0.50	—	—	0.51	0.33	0.48	0.11
Medicine Hat	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Edmonton	0.20	0.52	0.52	0.57	0.57	0.62	0.62	0.62	0.57	—	—	—	0.57	0.60	0.40	0.16
Battleford	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Indian Head	0.02	0.32	0.43	0.63	0.68	0.66	0.56	0.63	0.60	0.61	—	—	0.58	0.57	0.43	0.05
Brandon	0.00	0.06	0.34	0.56	0.63	0.59	0.58	0.61	0.60	0.63	—	—	0.68	0.60	0.50	0.11
Winnipeg	0.10	0.32	0.45	0.46	0.49	0.53	0.54	0.53	0.66	0.65	—	—	0.62	0.54	0.47	0.11
Woodstock	0.01	0.43	0.62	0.63	0.70	0.82	0.86	0.83	0.83	0.76	—	—	0.75	0.72	0.46	0.00
Toronto	0.00	0.38	0.57	0.59	0.70	0.70	0.80	0.79	0.78	0.74	—	—	0.66	0.67	0.48	0.00
Lindsay	0.11	0.42	0.50	0.61	0.60	0.62	0.64	0.64	0.55	0.60	—	—	0.45	0.52	0.30	0.36
Barnes	0.11	0.45	0.63	0.65	0.70	0.71	0.73	0.68	0.60	0.58	—	—	0.71	0.61	0.47	0.05
Gravenhurst	0.01	0.21	0.23	0.60	0.76	0.80	0.77	0.71	0.70	0.72	0.61	—	0.40	0.49	0.04	0.00
Haliburton	0.14	0.39	0.55	0.60	0.58	0.57	0.62	0.57	0.64	0.59	0.47	—	0.48	0.45	0.23	0.00
Kingston	0.26	0.66	0.72	0.75	0.75	0.79	0.79	0.76	0.74	0.69	0.61	—	0.50	0.45	0.06	—
Ottawa	0.08	0.50	0.50	0.57	0.61	0.60	0.68	0.70	0.73	0.75	0.72	—	0.59	0.50	0.04	—
Montreal	0.01	0.31	0.58	0.63	0.63	0.66	0.61	0.55	0.50	0.53	0.48	—	0.51	0.04	0.00	—
Sherbrooke	0.12	0.43	0.57	0.57	0.68	0.66	0.67	0.73	0.63	0.60	0.52	—	0.49	0.40	0.11	—
Quebec	0.03	0.28	0.50	0.57	0.59	0.59	0.59	0.48	0.46	0.55	0.51	—	0.33	0.31	0.05	—
Fredericton	0.07	0.29	0.41	0.50	0.50	0.67	0.68	0.70	0.72	0.60	0.50	—	0.46	0.30	0.14	—
Charlottetown	0.15	0.36	0.40	0.47	0.59	0.63	0.63	0.64	0.62	0.68	0.67	—	0.61	0.46	0.13	—

	Victoria	Nanaimo	Alberni	Kootenai	Savoures	Calgary	Medicine Hat	Edmonton	Battleford	Indian Head	Brandon	Winnipeg	Woodstock	Toronto	Lindsay	Barnes	Gravenhurst	Haliburton	Kingston	Ottawa	Montreal	Sherbrooke	Quebec	Fredericton	Charlottetown	
Mean proportion of sun shining	0.00	0.21	0.25	0.46	—	0.47	0.48	—	0.47	0.46	0.45	0.62	0.60	0.52	0.57	0.48	0.49	0.61	0.56	0.48	0.51	0.38	0.48	0.50	—	
Difference from average	—0.09	—0.07	—	—	—	—	—	—	—0.02	—0.08	—0.12	—0.07	—0.02	—0.02	—0.05	—	—0.03	—0.03	—0.09	—	—	—	—	—	—	
Maximum daily amount	0.84	0.31	0.78	0.88	—	0.94	0.89	—	0.80	0.81	0.89	0.87	0.81	0.67	0.89	0.77	0.94	0.91	0.91	0.88	0.91	0.85	0.85	0.93	0.91	
Date	20	31	20	22	—	24	20	—	21	21	21	21	26	25	22	11	9	12	9	18	8	18	27	9	15	15
No. of days completely clouded	0	0	4	0	—	0	0	—	4	4	1	3	1	1	1	1	1	0	0	0	2	1	1	1	—	

Aurora recorded

Where the class of aurora is noted by the observer, it is given. I being the lightest, IV the feeblest in brilliancy.

1. Sion, Waitefield IV, Foxleigh, Brownhill II, St. Albans IV.
2. Waitefield III, Gray Hill III, Hillsdown III, Foxleigh, Brownhill IV, Chaplin IV, Meota III.
3. Kneehill, Estevan, Kenora IV.
4. Chaplin IV.
6. Gray Hill IV, St. Albans II.
7. Haliburton.
8. Kenora II.
12. Brownhill IV.
15. St. Albans IV.
18. St. Albans IV.
19. Bruederheim, St. Albans IV.
20. Waitefield II, Gray Hill II, Hillsdown IV, Foxleigh, Chaplin IV, Meota II, St. Albans I, Kenora IV, Shawenegan Falls II.
26. Meota, I.
29. Bala.
30. Bruederheim, Sion, Waitefield II, Gray Hill III, Hillsdown IV, Estevan II, Shawenegan Falls IV.
31. Sion, Waitefield III, Gray Hill IV, Waseca, Foxleigh, Meota IV.

Thunder recorded on :

1. Westminster, Georgetown, Emsdale, Aurora, Rossland, Princeton, B.C., Summerland, Quesnel, Nicola, Port Dover, Hamilton, Brantford, Birnam, Sutton West, Owen Sound, Meaford, Lucknow, Cockburn Island, Bruce Mines, Brome, Chicoutimi, Paspébiac.
2. Coutts, Leavings, Okotoks, Georgetown, Midland, Deer Park, Salmon Arm, Rossland, Quesnel, Tobacco Plains, Nicola, Pekisko, Brantford, Birnam, Peterboro, Otonabee, Madoc, Sutton West, Owen Sound, Brome.
3. Okotoks, Waitefield, Salmon Arm, Nicola, Golden, Big Creek, Crawford Bay, Pekisko, Gray Hill, Alix, Kneehill, Macleod, Gatesgarth, Chaplin, Brantford, Clarke City.
4. Rapid City, Ennismore, Quesnel, Red Willow, Gray Hill, Humboldt, Alameda, Almasippi, Morden, Oakbank.
5. Jumping Pound, Leavings, Okotoks, Elm How, Norquay, Big Creek, Red Willow, Bon Accord, High River, Gatesgarth, Almasippi, Oakbank, Paris, Birnam, Cockburn Island, Bruce Mines, Kenora.
6. Norquay, Bon Accord, Lake Talon, Bruce Mines.
7. Bruederheim, Woder, Lansdowne, Emsdale, Croydon, Westport, Huntsville, Waitefield, Big Creek, Pakan, Bon Accord, Chaplin, Peterboro, Otonabee, North Bruce, Madoc, Haliburton, Port Hope, B. atriee, Uplands, Sutton West, Bala, Copper Cliff, Brome, Chicoutimi, Shawenegan Falls.
8. Last Mountain, Elm How, Norquay, Big Creek, Indian Head, Gatesgarth, Estevan, Chaplin, Almasippi, Morden, Oakbank, St. Albans, Clarke City, Wolfville, Windsor, N.S.
9. Kinball, Norquay, Rapid City, Rossland, Princeton, B.C., Alberni, Foxleigh, Alameda, Gatesgarth, Chaplin, Oakdale Park.
10. Kimball, Leavings, Okotoks, Gretna, Rapid City, Salmon Arm, Rossland, Tobacco Plains, Gray Hill, High River, Foxleigh, Estevan, Almasippi, Carberry, Oakbank, St. Albans, Kenora.
11. Jumping Pound, Bruederheim, Leavings, Okotoks, Norquay, Salmon Arm, Tobacco Plains, Pakan, Gray Hill, High River, Almasippi, Owen Sound, Bruce Mines, Point Lepreaux.
12. Waitefield, Pakan, Foxleigh, Madoc, Brome, Chicoutimi, Clarke City, Summerside, St. Stephen.
13. Bruederheim, Rapid City, Point Escuminac, Foxleigh, Carberry, Oakdale Park, Summerside, Sussex, Channel.
14. Bruederheim, Okotoks, Gretna, Norquay, Waitefield, Pakan, Red Willow, High River, Chaplin, Meota, Almasippi, Carberry, Morden, Wolfville, Windsor, N.S.
15. Last Mountain, Norquay, Deer Park, Bon Accord, Foxleigh, Meota, Almasippi, Carberry, Birman, Cockburn Island, Bruce Mines, Kenora.
16. Georgetown, Strathroy, Huntsville, Foxleigh, Chaplin, Brantford, Madoc, Point Clark, Owen Sound, Lucknow.

17. Port Hope, Foxleigh, Sutton West, Chincoutim, St. Stephen.
18. Port Elsie, St. John.
19. Red Wolf, In Accord, Gray Hill, Hillsdown.
20. Quesnel, Fort St. John.
22. Pakan, Moose, Mississippi, Oakbank.
23. Nicola, Chetopa, Cockburn, Bruce Mines.
24. Leavings, E. Sable, Huntsville, Salmon Arm, Rossland, Princeton, B.C., Nicola, Big Creek, Hedley, Pekisko, Osoyoos, Madoc, Haliburton, Beatrice, Uplands, Lake Tidon, Bala, Copper Cliff, Shawanegun Falls.
25. Somas River, Norquay, Alberni, Pakan, St. Albans, Windsor, N. S.
26. Rapid City, Mississippi, Cape Magdalen, Wolfville, E. Pt. Sable Island.
28. Bromes.
29. Rossland, Princeton, B.C., Summerland, Quesnel, Foxleigh.
30. Rapid City, Foxleigh, Alameda, Estevan, Chaplin, Mississippi, Carberry, St. Albans.
31. Norquay, Chaplin, Oakbank.

FORECASTS FOR AUGUST, 1907.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 1396. These were divided as follows:—

District.	No. Issued	VERIFIED.			Per- centage.
		No. Fully	No. Partly	No. Not	
Alberta	88	61	22	5	81.8
Saskatchewan	87	67	17	3	86.8
Manitoba	90	74	10	7	86.7
Lake Superior	132	90	30	3	86.4
Lower Lake Region	138	110	26	3	88.8
Georgian Bay	138	112	26	1	90.2
Ottawa Valley	116	97	16	3	90.9
Upper St. Lawrence	116	96	17	3	90.0
Lower St. Lawrence	117	89	23	6	85.5
Gulf	118	96	18	4	89.0
Maritime Provinces, West	120	102	23	4	88.0
Maritime Provinces, East	120	98	28	3	89.8
Total	1396	1060	252	45	87.7

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,
Director.

Meteorological Office, Toronto,
18th October, 1907.

DEPARTMENT OF MARINE AND FISHERIES, CANADA.

METEOROLOGICAL SERVICE.

Monthly Weather Review.

VOL. XXXI.

SEPTEMBER, 1907.

No. 9.

INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

REMARKS UPON THE WEATHER.

The weather on the Islands and lower mainland of British Columbia was somewhat warmer than usual. High temperatures continued up to the 11th when the weather turned cooler and continued so almost to the end of the month, a warmer period from the 21st to 25th only intervening. Dry weather occurred on Vancouver Island, also in some districts in other portions of the province. The chief wet periods were the 2nd to 6th, 11th, 12th, 15th to 17th, 27th and 30th. Much bright sunshine was recorded during the first two weeks, also from the 20th to 24th, but the proportion for the month was a little less than the average. On the upper mainland the weather was warmer than usual excepting in a few places in the district of Cariboo where it was slightly cooler. Quite warm weather was recorded during the first eight or nine days, also from the 21st to 26th. The proportion of bright sunshine slightly exceeded the average and there was much fine weather from the 6th to 13th, also after the 19th. At Rossland snow was recorded on the 12th.

In the Province of Alberta the weather was quite cool in the southern and eastern portions, but elsewhere the mean temperature at most places was either average or slightly above. In most localities after the 9th frosts were frequent and 11° was recorded at High River on the 13th. Such low temperatures occurring at night were generally followed by mild days. Fine bright weather was frequent during the first nine days, also from the 17th to 30th. The precipitation which included some snow on or about the 11th and which was excessive in the aggregate occurred chiefly on or about the 2nd, 5th, occasionally from the 10th to 18th and on the 27th. On the 30th many plants were still in bloom.

In Saskatchewan the weather was unusually cool, the temperature after the 6th seldom exceeding 65 and frosts at night occurring occasionally. Much bright sunshine was recorded throughout the greater portion of the month and the precipitation which was light in most districts, was recorded generally on or about the 8th, 11th, 13th, 17th, 22nd and 28th.

The weather in Manitoba was quite cool and although the temperature after the 6th occasionally rose above 60 it was mostly below this, and frosts at night were frequent after the 20th. The precipitation which was recorded chiefly on or about the 7th, 12th, 13th, 23rd and 27th was unusually light. Much fine weather occurred between the 1st and 10th, 14th and 21st and 24th and 30th, the proportion of bright sunshine being somewhat above the average.

The weather in the Peninsula of Ontario was slightly warmer than usual, whilst elsewhere the mean temperature was somewhat below the average. On or about the 23rd there was a marked fall in the temperature and the weather continued cool to the end of the month, frosts being recorded occasionally at some places during this period. With a few quite local exceptions the rainfall was excessive, the chief falls recorded occurring on or about the 1st, 4th to 6th, 10th, 11th, 17th to 20th, 24th, 25th and occasionally from the 27th to 30th. Some fine weather occurred during the month, but the proportion of bright sunshine was much below the average. The condition of vegetation on the 30th was normal.

In British Columbia the weather was somewhat cooler than normal and after the 15th quite normal. On the last three or four days of the month frosts were recorded at many places. The precipitation exceeded the average and rain was frequent in the eastern half of the province. In the western counties the chief showers were on the 7th, 10th to 20th, 16th, 17th, 21st, 24th and 25th. Dull weather prevailed throughout the month but sunshine was below the average.

In New Brunswick the mean temperature did not depart much from the normal, but the weather was somewhat unusual and frosts were recorded at many places on or about the 19th and 29th. Dull weather was general during the first twelve days, after which much finer weather prevailed. The chief periods of precipitation were 1st to 6th, 8th, 9th, 11th, 16th, 17th, 21st, 24th, 26th and 29th, these dates varying at most stations. The total fall was considerably in excess of the average. Thunderstorms were reported on the 6th and 17th, and gales on the 21st and 29th, the latter gale being accompanied by a heavy rain. On the 30th vegetation was still quite green and showed no sign of ripening.

The weather in Nova Scotia was somewhat cool at most places, but at Sydney and Truro on the contrary the mean temperature was slightly above the average. Quite high temperatures occurred on the 19th and 20th, but they were quite low on the last two days, but with these exceptions there were very few marked changes during the month. In southern districts the weather was finer than in the northern portion where it was somewhat dull. Precipitation occurred chiefly about the 1st to 9th, 17th, 22nd to 26th and 30th. Gales were recorded on the 25th and 30th.

In Prince Edward Island the weather did not depart much from the normal excepting in the amount of the precipitation which was quite excessive. The falls recorded occurred at Charlottetown on fourteen days and the dates elsewhere, which varied with the district, showed a similar frequency. Thunderstorms were reported on the 6th and 27th. The condition of vegetation was normal.

F. L. FAYSL.

ATMOSPHERIC PRESSURE.

The mean atmospheric pressure for September exceeded the average west of Lake Superior, also in the Gaspé Peninsula and in Cape Breton, whilst elsewhere in Canada a subnormal value was registered. The range of departure from normal was 0.18 of an inch, the extremes being +0.10 of an inch at Calgary, Alta. and -0.08 of an inch at Toronto, Ont.

HIGH AREAS.

Eight areas of high barometric pressure were charted during September, the majority pursuing a southeasterly path from the Yukon to the Middle Atlantic States. Few of the systems were very pronounced in character, but most of them were accompanied by cool weather, more particularly throughout Western Provinces.

LOW AREAS.

Nine cyclonic systems were charted during September, and all passed out of the field of observation north of the 40th parallel. These areas of low barometric pressure were first observed between the North Pacific States and the Yukon Territory and the general course pursued was in a southeasterly and easterly direction to the Gulf of St. Lawrence. As a general rule the areas increased rapidly in energy as they progressed eastward, and were accompanied by gales.

During the latter half of the month when the majority of the areas were passing in quick succession over Eastern Canada the weather was very stormy in the Gulf of St. Lawrence.

WINDS.

In British Columbia, on Vancouver Island and over the mainland the direction was largely variable favouring somewhat the south and west. There were four days with strong and eight with fresh breezes.

In Alberta and Saskatchewan, the direction was variable with ten days with strong and nine with fresh breezes.

In Manitoba the north and west directions were most in evidence with seven days with strong and ten with fresh breezes and one gale.

In the Lake Region the south and west winds were strong and gusty, although the gales east were well marked. There were four days with fresh breezes and two gales, the latter occurring between the 11th and 12th and between the 20th and 21st.

In the Ottawa and St. Lawrence Valleys the winds were variable, being very evenly distributed between all quarters. There were seven days with fresh breezes and one gale.

In the Lower St. Lawrence Valley and the Gulf of St. Lawrence the direction was variable with fourteen days with strong and seven with fresh breezes and two gales, the latter occurring between the 17th and 18th and on the 25th.

In the Maritime Provinces the direction was variable with strong and eleven with fresh breezes and two gales, the latter occurring between the 24th and 25th and between the 29th and 30th.

The gales were satisfactorily warned, with the exception that no warning was issued for Lakes Erie and Ontario for the storm of the 11th and 12th and a warning forwarded to River and Bay stations on the 20th, was not justified by subsequent dangerous winds.

TEMPERATURE.

In British Columbia, exclusive of Cariboo, the temperature was above the average by from 1 to 3 degrees. In the Peninsula of Ontario it was above the average by an equal amount, but over the large remaining portion of the Dominion a negative departure occurred, except in one or two isolated localities where the average was just maintained. The chief negative departure, amounting to 7 degrees, was experienced in Saskatchewan and Alberta, elsewhere the departure was usually from 1 to 2 degrees.

The Highest and Lowest temperatures in each Province during September, 1907, were:

British Columbia,	89° on 8th at North Nicomen,	46° on 17th at Fort St. James.
Alberta,	91° on 2nd at Medicine Hat,	41° on 13th at High River.
Saskatchewan,	83° on 6th at Moose Jaw,	40° on 29th at Foxleigh.
Manitoba,	86° on 1st at Birtle,	42° on 27th at Carberry.
Ontario,	(89° on 21st at Point Clark, and 80° on 15th at Stony Creek,	(23° on 27th at Port Arthur.
Quebec,	83° on 15th at St. Anne de Bellevue,	25° on 28th at Chicoutimi.
New Brunswick,	(79° on 5th at Sussex, and 77° on 15th at St. Stephen,	(29° on 19th at Sussex and St. Stephen.
Nova Scotia,	80° on 13th at Wolfville,	29° on 29th at Truro.
P. E. Island,	71° on 13th at Hamilton,	35° on 28th at Summerside.

PRECIPITATION.

In British Columbia at Victoria, on Vancouver Island, the rainfall was 15 per cent below the usual amount, but on the mainland it was above the average, the excess varying from 3 per cent in Cariboo to 100 per cent in more southern districts. In the Western Provinces Calgary recorded an excess of precipitation of over 100 per cent, but all other localities gave a deficiency ranging from 8 per cent at Battleford to 17 per cent at Swift Current, and 67 per cent at Winnipeg. In Ontario, at Parry Sound, the rainfall was 29 per cent less than the usual amount, and at Southampton it was the average, but all other localities recorded a positive departure, which in several districts was as much as from 60 to 80 per cent. In Quebec the rainfall was above the average and nearly everywhere by about 25 per cent. In the Maritime Provinces Sydney recorded a deficiency of 35 per cent, whilst elsewhere there was a positive departure, the chief departures being St. John, 41 per cent, Chatham, 48 per cent, and Fredericton 59 per cent.

BRIGHT SUNSHINE.

From Ontario to the Maritime Provinces the hours of bright sunshine recorded were less than average, the deficiency ranging from 17 to 21 per cent of the possible. From Manitoba westward sunshine was on the contrary a little in excess of the average, except near the coast where it was about equal to the average.

PRESSURE, TEMPERATURE, WIND AND CLOUD STATISTICS IN THE DOMINION OF CANADA, SEPTEMBER, 1907.

a Barometer not reduced to Sea Level. * Stations not furnished with Registering Thermometer.

STATION.	PRESSURE										TEMPERATURE										DURATION OF WIND FROM										CLOUDS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
NOVA SCOTIA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Bridgetown	43	49	65	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30	46	30

PRECIPITATION AT STATIONS REPORTED AS NO WEATHER &
DURING SEPTEMBER

REFERENCES

NOTATION

Year of Data	Number of Deaths	Rate per 100,000
1990	10,000	10.0
1991	10,500	10.5
1992	11,000	11.0
1993	11,500	11.5
1994	12,000	12.0
1995	12,500	12.5
1996	13,000	13.0
1997	13,500	13.5
1998	14,000	14.0
1999	14,500	14.5
2000	15,000	15.0
2001	15,500	15.5
2002	16,000	16.0
2003	16,500	16.5
2004	17,000	17.0
2005	17,500	17.5
2006	18,000	18.0
2007	18,500	18.5
2008	19,000	19.0
2009	19,500	19.5
2010	20,000	20.0
2011	20,500	20.5
2012	21,000	21.0
2013	21,500	21.5
2014	22,000	22.0
2015	22,500	22.5
2016	23,000	23.0
2017	23,500	23.5
2018	24,000	24.0
2019	24,500	24.5
2020	25,000	25.0

BIBLIOGRAPHY

Copitlam ..	5	27	0.19	
Denman Island	8	22	0.36	
Goldstream Lake	10	22	0.45	
Hartley Bay	8	22	0.36	
Nas Harbour	11	19	0.58	
Nanaimo ..	4	22	0.18	1
Royal Oak	6	24	0.25	0
Sumas River	5	24	0.21	
Swanson Bay	7	23	0.30	

10

ALBERTA

11. $\frac{1}{2} \log \frac{1}{2} = -0.15321$ (Table 1.1.1) $\frac{1}{2} \log 100 = 1.00000$ (Table 1.1.1)

$$\| \frac{1}{2} (1 + |x|) (1 + |y|) \left[\frac{1}{2} (1 + |x|) \frac{1}{2} (1 + |y|) \right]^{-1} \frac{1}{2} (1 + |x|) \frac{1}{2} (1 + |y|) \|_{L^2}^2$$

SASKATEWON

Arcola	1-10	4	22	0-40	11	0	12	
Elm-How	1-10	4	22	0-40	11	0	12	
Hailey	1-10	5	25	0-70	11	0		
Insinger	1-10	5	25	0-70	11	0		Aggravated (10, 11, 20, 41) 0
Last Mountain	1-10	6	24	0-60	11	1	0	del 10
Regina	1-10	8	17	0-23	11	1	0	Leg 8th, 9th Fog 21-31

$$\Lambda_{\text{eff}}(m_{\text{eff}}) \approx (11.29 - 11.5) \ln(10)$$
$$\begin{aligned} \log \pi_1 &= 11, \\ \log \pi_2 &= 1 \end{aligned}$$

MANITOBA —

Beaver	4	3.9	2.00	11
Cartwright	7	2.2	1.35	19
Gretna	6	1.9	0.62	43
Norquay	7	2.5	0.30	15
Rapid City	5	2.4	0.25	21
Rosebank				

ACCEPTED FOR PUBLICATION 11/10/2014

ONTARIO

Aurora,	18	8	21	1.24	28	Thunder 18, 19, 20, 21
Arden	6.12	13	15	1.10	20	Thunder 6th, 8, 10, 20, 21
Croydon	6.15	10	20	1.10	11	Thunder 11th, 12, 19, 21
Deer Park	1.11	7	22	1.30	11	
Dutton	1.10	8	20	1.50	16	Thunder 15, 16
Ensdale	6.11	18	5	1.61	17	Thunder 5th, 6th, 16, 20
Eunismore	2.18	5	23	1.12	20	Aurora 1
Godriche	6.17	7	23	6.10	28	Thunder 21
Godschown	1.10	15	12	1.02	28	Thunder 15, 16, 17, 28
Huntswell	2.06	13	17	6.00		Thunder 6th, 16, 20
Lansdowne	6.17	7	22	6.06	30	Thunder 20
MacCue	2.11	7	22	6.1	16	
Midland	1.06	15	12	6.1	3	Thunder 15, 16
Montague	1.11	7	22	2.15	30	
Orangeville	1.07	7	22	1.04	11	
Princeton	1.11	6	21	1.75	11	Thunder 11, 16
Sydenham	1.11	10	24	2.15	20	
Strathroy	1.26	12	18	6.05	17	Thunder 12, 16, 17
Watford	1.26	9	21	6.07	17	
Westport	1.11	8	22	1.15	20	
Wooler	3.11	9	20	2.24	20	
Westminster	2.20	7	20	6.71	10	Thunder 6th, 16
Wharton	3.06	10	20	6.00	3	Thunder 10, 11, 12, 20

Thompson, G. B. 1988. *Journal of Herpetology* 22: 10-20.

Thompson 1981: 12, 19, 21

Thompson, John, ed., 1990.
 Antelope

Thomson, L. 1990. *Journal of the American Water Resources Association* 26: 101-110.

$$\begin{aligned} \frac{1}{2} \log 10 &= 0.1761 \\ \frac{1}{2} \log 10 &= 0.1761 \end{aligned}$$

Lemma 1.5 *Let*

Thanks to the

NEW BRUNSWICK

Point Estimator	2.35	8	19	112	500	1000	Eq. (2)
-----------------	------	---	----	-----	-----	------	---------

Future Work

TABLE 10.—SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF SEPTEMBER.

		Hours of day.																							
		I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.
		h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
St. John's		0 11	0 0	0 0	0 19	0 18	0 14	0 1	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 1	0 1	0 21						
St. John's		0 04	0 7	0 4	0 4	0 4	0 19	0 0	0 0	0 0	0 4	0 0	0 4	0 0	0 4	0 0	0 4	0 9							
A. C.		0 11	0 0	0 0	0 16	0 16	0 19	0 4	0 4	0 0	0 4	0 0	0 4	0 0	0 4	0 0	0 19	0 0							
K.		0 06	0 24	0 47	0 0	0 0	0 7	0 06	0 07	0 06	0 29	0 08	0 29	0 21											
S.																									
C.																									
Melbourne Harbor		0 19	0 19	0 0	0 29	0 06	0 7	0 7	0 08	0 06	0 06	0 06	0 06	0 06	0 06	0 06	0 26	0 02							
T. p.		0 04	0 29	0 0	0 08	0 06	0 06	0 06	0 06	0 06	0 06	0 06	0 06	0 06	0 06	0 06	0 47	0 09							
B. p.																									
B. p. Harbor		0 0	0 0	0 44	0 0	0 0	0 0	0 4	0 06	0 08	0 72	0 08	0 44	0 08											
B. p. Harbor		0 0	0 04	0 4	0 0	0 0	0 0	0 4	0 04	0 04	0 07	0 0	0 42	0 18	0 03										
W. p. Harbor		0 14	0 12	0 4	0 00	0 0	0 09	0 08	0 08	0 08	0 08	0 08	0 08	0 08	0 08	0 08	0 27	0 10							
W. p. Harbor		0 06	0 22	0 31	0 13	0 16	0 44	0 43	0 46	0 44	0 44	0 44	0 44	0 44	0 44	0 44	0 27	0 10							
T. p.		0 01	0 27	0 44	0 0	0 0	0 06	0 06	0 08	0 04	0 07	0 0	0 0	0 0											
T. p.		0 0	0 4	0 28	0 0	0 0	0 12	0 12	0 40	0 43	0 44	0 44	0 44	0 44	0 44	0 44	0 31	0 06							
B. p.		0 01	0 39	0 31	0 41	0 47	0 00	0 18	0 17	0 51	0 49	0 46	0 42												
Gravelly Point		0 02	0 06	0 06	0 18	0 22	0 24	0 31	0 32	0 24	0 29	0 42	0 09	0 04											
Hedgeley Bay		0 06	0 29	0 34	0 29	0 35	0 37	0 41	0 43	0 39	0 36	0 24	0 04												
Kingston		0 01	0 08	0 20	0 32	0 34	0 4	0 02	0 35	0 47	0 42	0 43	0 31	0 04											
Ottawa		0 05	0 26	0 34	0 38	0 46	0 47	0 44	0 46	0 45	0 39	0 31	0 06												
Montreal		0 05	0 26	0 34	0 39	0 49	0 41	0 44	0 42	0 44	0 46	0 46	0 00												
Sherbrooke		0 01	0 06	0 22	0 36	0 49	0 08	0 4	0 44	0 43	0 42	0 46	0 31	0 06											
Quebec		0 01	0 36	0 42	0 47	0 47	0 26	0 44	0 43	0 44	0 44	0 44	0 38	0 02											
Fredericton		0 11	0 31	0 37	0 44	0 46	0 07	0 09	0 37	0 36	0 4	0 47	0 22												
Charlottetown		0 11	0 41	0 49	0 47	0 47	0 02	0 54	0 4	0 40	0 49	0 40	0 26	0 01											

	Vancouver	Nanaimo	V. C.	Kamloops	Savona	Calgary	Medicine Hat	Edmonton	Rathford	Indian Head	Brandon	Winnipeg	Woodstock	Toronto	Lindsay	Barnes	Gravelly Point	Hedgeley Bay	Kingston	Ottawa	Montreal	Sherbrooke	Quebec	Fredericton	Charlottetown	
Mean proportion of day in month <i>Guaranteed sun (Shade hour)</i>	0.41	0.42	0.40	0.41			0.33	0.45		0.46	0.44	0.40	0.35	0.44	0.39	0.46	0.28	0.44	0.42	0.35	0.34	0.33	0.42	0.42		
Difference from average	0.03		0.04				0.07	0.04	0.04	0.19	0.43	0.21	0.12				0.17	0.11	0.19				0.07			
Maximum daily amount	0.88	0.86	0.80	0.84			0.92	0.82		0.84	0.78	0.86	0.89	0.86	0.88	0.87	0.77	0.86	0.84	0.84	0.89	0.86	0.85	0.92	0.90	
Days	22	23	22	18	17		9	1		3	0	2	26	21	12	11	21	3	18	22	22	22	18	18	28	
No. of days completely clouded	0	0	0	0	0		1	6		1	3	6	11	3	0	0	1	17	0	1	9	9	4	10	7	6

Aurora recorded

Where the class of aurora was observed by the observer, the date, time, and height of the brilliancy.

1. Fort Vermilion.
2. Fort Vermilion.
3. St. Albans, III; Kenora, III.
4. Cartwright, Chaplin, III; Alameda, IV; St. Albans, II; Fort Vermilion.
5. Meota, IV; Kenora, IV; Fort Vermilion.
6. Insinger, Waseca.
9. Salmon Arm, Chaplin, IV; Meota, IV; St. Albans, IV; Cape Magdalene.
10. Cartwright, Cape Magdalene.
11. Emsdale, Insinger, Cartwright, Big Creek, III; White Horse, III; Carcross, IV; of Meota, III; Lake Talon, Kenora, IV, Alameda.
12. Sion, Kenora, IV, Madoc, IV; Shawenegan Falls.
13. Fort Vermilion.
14. Foxleigh, St. Albans, II.
15. Fort Vermilion.
16. Chaplin, IV.
17. Chaplin, IV, Fort Vermilion.
18. Chaplin, III.
23. Waitefield, III.
25. Treherne.
26. Sion, Red Willow, Hillsdown, IV; Brownhill, II; Alameda, I; Foxleigh, St. Albans, II; Oakbank, Bruce Mines, IV; Kenora, IV; Haliburton.
27. Kneehill, Foxleigh, Treherne.
28. Sion, Red Willow, Pakan, III; Kneehill, Hillsdown, IV; Waitefield, II; Foxleigh, Brownhill, II; Chaplin, II; Meota, I; St. Albans, III; Bruce Mines, III, Fort Vermilion.
29. Kenora, IV, Fort Vermilion.
30. Big Creek, III; White Horse, II; Waitefield, IV.

Thunder recorded on:

1. Aurora, Georgetown, Midland, Strathroy, Warton, Crawford Bay, Summerland, Tobacco Plains, Roseland, Point Clark, Beatrice, Cockburn Island, Bruce Mines, Owen Sound, Clinton, Lucknow, Stony Creek, Madoc, Port Hope, Agincourt, Hamilton, Birnam, Paris, East Toronto, Brantford, Port Dover, Port Burwell, Brome.
2. Bruderheim, Bittern Lake, Golden, Salmon Arm, Red Willow, Blackfalds, Alix, Wetaskiwin, Waitefield, Sutton West, Josephsburg, Bon Accord.
3. Heather Brae, Sion, Waitefield, Meota, Bon Accord.
4. Stuarts Lake, Waitefield, Meota, Point Clark, Lucknow, Port Dover.
5. Aurora, Emsdale, Georgetown, Warton, Crawford Bay, Princeton, B.C., Summerland, Salmon Arm, Cockburn Island, Meaford, Owen Sound, Lake Talon, Orillia, Clinton, Uplands, Madoc, Agincourt, Hamilton, Birnam, Paris, East Toronto, Brantford, Port Burwell, Brome.
6. Arden, Westminster, Tobacco Plains, Macleod, Pekisko, Sutton West, Haliburton, Bon Accord.
7. Point Clark, Owen Sound, Lake Talon, Percé, Paspébiac.
8. Arden, Clinton, Birnam, Port Burwell.
9. Heather Brae, Sion, Emsdale, Huntsville, Big Creek, Red Willow, Pakan, Wetaskiwin, Waitefield, Beatrice, Bala, Lake Talon, Agincourt, Haliburton, Bon Accord.
10. Coutts, Okotoks, Insinger, Arden, Ladner, Tobacco Plains, Macleod, Pekisko, Lloydminster, Sutton West, Agincourt, Paris, East Toronto.
11. Bruderheim, Croydon, Princeton, Rossland, Hillview, Cockburn Island, Lucknow, Paris, Brantford.
12. Croydon, Gatesgarth.
14. Crawford Bay.
15. Bruce Mines, Paspébiac.
16. Dutton, Emsdale, Huntsville, Midland, Strathroy, Westminster, North Nicomen, Tzouhalem.

Beaufort, N.W.	and, Fort Erney, Mines, Lake Talon, Chénoua, Lucknow, Upplands, Madoc, Aris, Brantford, Port Doyer, Port Burwell, Br.ome, Shawenegan Falls, Point La.
21. S. C. T.	Inton, Port Burwell, Windsor, N.S.
22. K.	
23. C. G. G.	ton, Meaford, Kenora, Haliburton.
24. A. T.	le, Georgetown, Huntsville, Princeton, Barre, Sutton West, Lake Talon, Up-
25. M. C. T.	est Toronto, Clontarf, Brantford, Port Burwell.
26. S. C. T.	
27. W. C. T.	
28. W. C. T.	er, Port Hope.
29. A. G. C. T.	on, Farnismore, Sutton West, Madoc, Port Burwell, Shawenegan Falls.
30. C. G. T.	Sutton West, Br.ome.
31. N. C. T.	ton, B.C., Salmon Arm.
32. S. C. T.	Russland.
33. G. C. T.	Agincourt, East Toronto, Brantford, Port Doyer.
34. L. C. T.	
35. B. C. T.	

FORECASTS FOR SEPTEMBER, 1907.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.*

The number of predictions issued during the month was 346. These were divided as follows :—

District.	Verdict.				
	No. Fully.	No. Only.	No. Partly.	No. Not.	Per-centage.
A.	9	90	12	6	84.6
S. C. T. W.	9	63	14	2	88.6
M.	8	64	14	5	85.5
Lake Superior.	1	59	26	14	78.6
Port Doyer, Br.	6	100	21	4	88.4
C. G. T. G.	7	101	10	5	88.4
O. C. V. C.	6	92	23	6	85.5
C. C. S. T.	6	91	23	4	87.4
C. C. S. T.	6	92	22	6	85.8
G.	6	98	17	8	86.6
4. C. C. T. C. C. T. C.	7	96	25	9	83.5
4. C. C. T.	7	95	22	13	81.5
Total.	100	1020	238	79	85.3

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. E. STUPART,

Director.

Meteorological Office, Toronto,

29th September, 1907.

DEPARTMENT OF MARINE AND FISHERIES, CANADA.

METEOROLOGICAL SERVICE.

Monthly Weather Review.

VOL. XXXI.

OCTOBER, 1907.

No. 10

INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

REMARKS UPON THE WEATHER.

The weather on the islands and lower mainland of British Columbia was unusually mild and up to the 18th it was comparatively warm. After this date somewhat lower temperatures prevailed excepting from the 23rd to 25th when 60° was exceeded in many districts. Frosts were recorded at a few places and only on a very few days. Fine weather prevailed and the mean proportion of bright sunshine exceeded the average. The rainfall which in the aggregate was considerably below the average was recorded chiefly during the first and last week. On the 30th plants were still quite green they not having been affected by frost. On the upper mainland the weather was quite similar to that in districts to the westward, the mean temperature being well above the average and the precipitation considerably below. The wet periods were chiefly the first and last week also on or about the 12th and 22nd, but at many places they were less frequent. Frosts were recorded on many days.

In the Western Provinces the weather was unusually mild, more especially in Alberta, where at some stations the mean temperature excess was 6° or over. In the province referred to, the daily maximum temperature frequently exceeded 70° at some places, but the nights were comparatively cold and frosts were quite frequent. Exceedingly fine weather prevailed and the only precipitation of importance occurred on or about the 5th, 7th and 30th. Some plants remained green until a late date, but vegetation generally was withered by frost early in the month.

The weather in Manitoba, like that in provinces to the westward, was exceedingly fine, the mean proportion of bright sunshine being well above the average, and the sky being almost continuously unclouded from the 11th to 28th. Quite mild weather prevailed up to about the 23rd, and the mean temperature somewhat exceeded the average at many places, nevertheless the nights were generally cold and after the 17th hard frosts were very frequent. On the 1st there was much precipitation and lighter falls occurred occasionally during the first week, also on or about the 26th and 30th, but the aggregate amount was considerably below the average.

In Ontario the weather was unusually cold, and after the 18th, frosts were recorded on many days. From the 4th to 11th rain was of frequent occurrence and there were also falls on or about the 26th and 28th, but the aggregate amount was light in the western portion though heavy in eastern districts. After the 11th there was much fine weather and the proportion of bright sunshine exceeded the average. Light falls of snow occurred upon several days during the month.

The weather in the Province of Quebec was characterised by low mean temperatures; quite cold weather prevailed after the 18th, and frosts at night were of frequent occurrence throughout the month. Falls of rain or snow were somewhat frequent and in most districts the total precipitation was excessive; nevertheless there was much fine weather, more especially after the 13th, and the mean proportion of bright sunshine exceeded the average.

In New Brunswick the weather was mostly dull and wet up to the 11th, after which there were many fine days, but the proportion of bright sunshine was somewhat below the average. Up to the 18th the weather was generally quite mild, but after this date quite low temperatures prevailed and frosts occurred on many days. Gales were reported on the 4th, 8th and 21st. Snow was recorded upon several days after the 17th.

The weather in Nova Scotia was comparatively cool up to the 19th, and after that date quite low temperatures were reported, frost being of frequent occurrence. Dull weather prevailed, and in northern districts precipitation occurred on many days and exceeded the average quantity for the month. Elsewhere it was generally below the average and the falls were less frequent. Snow was recorded at many places on or about the 21st.

In Prince Edward Island the weather was somewhat cold, more especially after the 18th when frosts were frequent. Clouded skies prevailed and rain which occurred chiefly on or about the 1st, 4th, 6th to 8th, 12th to 14th, 21st to 24th and 28th to 30th, was slightly excessive in the aggregate. On the 21st and 19th snow was also recorded. L. F. PAYNE.

BAROMETRIC PRESSURE.

The mean barometric pressure for October was in excess of normal over the greater portion of the Dominion, but negative departures were recorded in Quebec, the Maritime Provinces and in northern Saskatchewan. The largest positive departure, + .08 of an inch, occurred at Port Arthur, Ont., and the highest negative departure, - .306 of an inch, at St. John, N.B.

HIGH AREAS.

Eleven areas of high pressure were traced during the month being much in excess of the usual number recorded in October. The areas all first appeared well to the northward in the northwestern portion of the continent and three as far north as the Yukon Territory. The general drift of the areas was southeasterly either over or to the southward of the Lake Region and thence off the United States Atlantic seaboard. Cool weather was their invariable accompaniment and as the month progressed some low night temperatures were experienced in many districts.

LOW AREAS.

Ten areas of low pressure were charted during the month, two appeared in the South Pacific States while the other eight were all first in evidence over the Yukon Territory and doubtless originally travelled in from the Pacific Ocean. The northwest areas passed south-eastward into the Western Provinces, thence either over or to the northward of the Lake Region and over the Gulf of St. Lawrence, while of the South Pacific areas one moved over and the other skirted the southern shores of the Lake Region. The areas were almost without exception of considerable energy conforming to the usual October type.

WINDS.

In British Columbia on Vancouver Island and over the Mainland the winds were mainly light to moderate and variable, a fresh or strong breeze being seldom experienced.

In Alberta and Saskatchewan the northwest, west and southwest directions were the most general with four days with strong and sixteen with fresh breezes and two gales.

In Manitoba the south and west directions were most in evidence with five days with strong and fourteen with fresh breezes and three gales.

In the Lake Region the westerly direction predominated with nine days with strong and seven with fresh breezes and four gales, the latter occurring between the 7th and 8th the 10th the 17th and between the 27th and the 28th.

In the Ottawa and Upper St. Lawrence Valleys the westerly direction was somewhat in the ascendency with seven days with strong and ten days with fresh breezes and three gales.

In the Lower St. Lawrence Valley and the Gulf the north and west directions were paramount with nine days with strong and nine with fresh breezes and seven gales, the gales being experienced on the 4th, the 8th, the 18th, the 20th, the 21th, the 26th and between the 28th and the 30th.

In the Maritime Provinces the direction was variable with twelve days with strong and eight with fresh breezes and six gales, the latter occurring on the 4th, the 8th, the 18th, the 21st, the 24th, and between the 28th and the 30th. Warnings issued to River Bay and Gulf stations on the 11th and 13th, were not justified by subsequent dangerous winds and a gale blew over the same districts on the 26th for which no warning was issued. The warnings forwarded on the 8th, 18th and 21st were in several localities reported received after the storm had begun and the gales in the Gulf of St. Lawrence on the 23rd and in the Lake Region on the 26th were only felt locally.

TEMPERATURE.

The temperature was supernormal from Eastern Saskatchewan to the Coast of British Columbia, normal in Southern Manitoba and very locally along the Gulf of St. Lawrence; elsewhere in Canada it was subnormal. Positive departures from the average were pronounced in Alberta, varying between 5 and 7 degrees while negative differences of from 2 to 7 degrees were recorded in Ontario and the greater portion of Quebec.

The Highest and Lowest temperatures in each Province during October, 1907, were:

British Columbia,	82° on 10th at Alberni,	2° on 16th at Atlin.
Alberta,	81° on 6th at Macleod,	6° on 17th at Paken.
Saskatchewan,	78° on 22nd at Battleford,	8° on 19th at Battleford and on 27th at Alameda.
Manitoba,	83° on 5th at St. Albans,	0° on 24th at Carberry.
Ontario,	80° on 1st at Sarnia,	10° on 28th at Bancroft.
Quebec,	67° on 17th at St. Anne de Bellevue,	10° on 27th at Clarke City.
New Brunswick,	67° on 18th at Chatham,	15° on 27th at St. Stephen.
Nova Scotia,	67° on 17th at Port Hastings,	17° on 20th at Truro.
P. E. Island,	65° on 16th at Hamilton,	25° on 26th at Summerside.

PRECIPITATION.

The precipitation of the month differed materially over various portions of the Dominion, in fact more so than usually occurs. From Manitoba to the Pacific Coast there was a decided deficiency, in some sections especially on the prairie reaching 100 per cent. whereas in the Ottawa and St. Lawrence Valleys there occurred an equally decided excess reaching 102 per cent. in the Gaspé Peninsula. In Ontario the precipitation varied considerably with the district, some localities recording a positive departure and others a negative. The same may be said of the Maritime Provinces except for Cape Breton when a considerable excess was recorded.

BRIGHT SUNSHINE.

Bright sunshine for October was in excess of normal throughout the greater part of the Dominion, small negative departure alone being recorded in New Brunswick. The extremes of departure were +17 per cent. of possible at Indian Head, Sask. and -4 per cent. at Fredericton, N. B.

[illegible]

ONTARIO—Continued.

		1191		1200		1210		1220		1230		1240		1250		1300		1310		1320		1330		1340		1350		1400		1410		1420		1430		1440		1450		1500		1510		1520		1530		1540		1550		1600		1610		1620		1630		1640		1650		1700		1710		1720		1730		1740		1750		1800		1810		1820		1830		1840		1850		1900		1910		1920		1930		1940		1950		2000		2010		2020		2030		2040		2050		2100		2110		2120		2130		2140		2150		2200		2210		2220		2230		2240		2250		2300		2310		2320		2330		2340		2350		2400		2410		2420		2430		2440		2450		2500		2510		2520		2530		2540		2550		2600		2610		2620		2630		2640		2650		2700		2710		2720		2730		2740		2750		2800		2810		2820		2830		2840		2850		2900		2910		2920		2930		2940		2950		3000		3010		3020		3030		3040		3050		3100		3110		3120		3130		3140		3150		3200		3210		3220		3230		3240		3250		3300		3310		3320		3330		3340		3350		3400		3410		3420		3430		3440		3450		3500		3510		3520		3530		3540		3550		3600		3610		3620		3630		3640		3650		3700		3710		3720		3730		3740		3750		3800		3810		3820		3830		3840		3850		3900		3910		3920		3930		3940		3950		4000		4010		4020		4030		4040		4050		4100		4110		4120		4130		4140		4150		4200		4210		4220		4230		4240		4250		4300		4310		4320		4330		4340		4350		4400		4410		4420		4430		4440		4450		4500		4510		4520		4530		4540		4550		4600		4610		4620		4630		4640		4650		4700		4710		4720		4730		4740		4750		4800		4810		4820		4830		4840		4850		4900		4910		4920		4930		4940		4950		5000		5010		5020		5030		5040		5050		5100		5110		5120		5130		5140		5150		5200		5210		5220		5230		5240		5250		5300		5310		5320		5330		5340		5350		5400		5410		5420		5430		5440		5450		5500		5510		5520		5530		5540		5550		5600		5610		5620		5630		5640		5650		5700		5710		5720		5730		5740		5750		5800		5810		5820		5830		5840		5850		5900		5910		5920		5930		5940		5950		6000		6010		6020		6030		6040		6050		6100		6110		6120		6130		6140		6150		6200		6210		6220		6230		6240		6250		6300		6310		6320		6330		6340		6350		6400		6410		6420		6430		6440		6450		6500		6510		6520		6530		6540		6550		6600		6610		6620		6630		6640		6650		6700		6710		6720		6730		6740		6750		6800		6810		6820		6830		6840		6850		6900		6910		6920		6930		6940		6950		7000		7010		7020		7030		7040		7050		7100		7110		7120		7130		7140		7150		7200		7210		7220		7230		7240		7250		7300		7310		7320		7330		7340		7350		7400		7410		7420		7430		7440		7450		7500		7510		7520		7530		7540		7550		7600		7610		7620		7630		7640		7650		7700		7710		7720		7730		7740		7750		7800		7810		7820		7830		7840		7850		7900		7910		7920		7930		7940		7950		8000		8010		8020		8030		8040		8050		8100		8110		8120		8130		8140		8150		8200		8210		8220		8230		8240		8250		8300		8310		8320		8330		8340		8350		8400		8410		8420		8430		8440		8450		8500		8510		8520		8530		8540		8550		8600		8610		8620		8630		8640		8650		8700		8710		8720	
--	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--	------	--

PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER & DURING OCTOBER, 1907.

RAINFALL

SNOWFALL

STATION.	Amount in inches	No. of Days, 30, or over	No. of Fair Days	Heaviest Fall in Month	Date	Amount in inches	No. of Days	Heaviest Fall in Month	Date	REMARKS
BRITISH COLUMBIA	in.			in.		in.		in.		
Beaver Lake	0.90	1	27	0.48						
Copitlan ..	2.77	8	23	1.12						
Denman Island	1.90	5	26	0.80						
Goldstream Lake	1.34	9	22	0.44						
Hartley Bay	2.83	14	17	1.00						
Naas Harbour	15.21	18	13	2.44						
Nanaimo ..	0.74	4	25	0.26	28					Fog on 26, 27.
Royal Oak										
Sumas River	2.42	7	24	0.68						
Swanson Bay	18.45	21	10	2.87						
ALBERTA										
Bardo	0.00	0	31	0.00						
Beaver Hills, W.	0.04	1	31	0.04	31					
Bismark	0.33	1	29	0.33	5					
Bruderheim	0.25	3	28	0.16	4					
Bittern Lake	0.31	3	18	0.24	31					
Caults	0.25	1	29	0.25	1					
Chover Bar										
Conjuring Creek	0.32	2	29	0.24	30					
Dorval	0.25	2	29	0.26	30					Thunder 30.
Grassy Lake	0.00	0	31	0.00						
Heather Brae	0.85	1	27	0.48	31					
Islay										
Innisfail										
Josephsburg	0.00	0	31	0.00						
Jumping Pound	0.21	3	28	0.16	1					Trace of snow on 1st.
Kimball	0.00	0	31	0.00						
Lacombe	0.11	2	29	0.10	30					
Leavings ..										
Macleod	0.15	1	30	0.15	7					
Magrath	0.17	1	30	0.17	5					
Mayton	0.32	1	30	0.32	30					
Morinville ..										
Okotoks	0.00	0	31	0.00						
Ponoka	0.30	1	30	0.30	5					
Sion	0.34	4	27	0.25	5					
Stirling										
Saddle Lake	0.00	0	31	0.00						
Vermilion										
Wabamun	0.14	4	27	0.32	31					
SASKATCHEWAN										
Arvola										
Elm How	0.25	1	26	0.25	31					Fog 1, 28, 29.
Hanley										
Ininger	1.20	1	29	1.20	7					Aurora 2, 13, 14, 27, 28. Fog 7.
Last Mountain	0	0	30	0	8					
Regina	0.05	2	27	0.04	6					Fog 5, 13, 14.
MANITOBA										
Beaver	0.14	2	29	0.12	1					
Cartwright	0.71	5	26	0.44	8					Aurora 14, 28.
Gretna	0.35	2	27	0.25	27					
Norquay	0.34	1	27	0.15	1					Fog 30, 31.
Rapid City	0.27	3	28	0.18	1	0.1	2	0.1	31	Fog 2, 31.
Rosebank										
ONTARIO										
Aurora ..	1.84	8	23	0.46	3					Thunder 7, 10. Fog 16.
Arden	2.35	12	19	0.79	8					
Croydon	0.34	3	28	0.11	28					
Deer Park	1.90	6	25	0.67	28					
Dutton	1.88	5	26	0.70	7					Thunder 7, 10. Aurora 1.
Emsdale	2.63	13	18	0.70	7					
Ennismore	2.15	6	25	0.45	6					
Goderich	1.94	7	24	0.70	27					
Georgetown	1.85	9	22	0.65	27					Thunder 7, 10. Fog 27. Aurora 1, 14.
Huntsville	3.09	8	23	1.15	7					
Laundown	1.74	3	28	1.38	7					
MacCoy	1.08	5	26	1.35	8					
Midland	3.53	6	25	1.35	1					
Montague	2.24	5	26	0.70	8					
Orangeville	1.50	8	23	0.62	7					
Princeton	2.02	1	27	0.35	7					Thunder 9.
Sydenham	3.35	4	27	1.15	7					
Strathroy	2.54	9	22	0.65	3					Thunder 8.
Watford	3.70	8	23	1.06	12					
Westport	2.76	7	23	0.92	7					
Wooler	2.85	7	24	0.89	8					Thunder 7. Thunder 10.
Westminster	1.80	5	26	0.49	6					Thunder 9, 10.
Warton	1.61	8	23	0.43	6					
NEW BRUNSWICK										
Point Escomiac	3.02	8	23	1.26	30		2			

PROPORTION OF TOTAL SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF OCTOBER, 1907.

STATIONS	HOURS ENDING															
	1 a.m.	3 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon.	1 p.m.	2 p.m.	3 p.m.	4 p.m.	5 p.m.	6 p.m.	8 p.m.
Victoria				0.00	0.20	0.35	0.48	0.45	0.47	0.49	0.51	0.37	0.24			
Nanaimo				0.21	0.38	0.51	0.55	0.61	0.59	0.54	0.49	0.32	0.28	%		
Agassiz				0.00	0.30	0.57	0.61	0.65	0.73	0.72	0.67	0.44	0.05			
Kamloops			0.06	0.22	0.39	0.58	0.65	0.71	0.69	0.68	0.60	0.56	0.15			
Savonas																
Calgary																
Edmonton				0.29	0.60	0.71	0.72	0.77	0.84	0.85	0.83	0.73	0.39	0.01		
Medicine Hat				0.21	0.61	0.80	0.85	0.90	0.87	0.86	0.85	0.75	0.49	0.01		
Battleford																
Indian Head				0.13	0.55	0.60	0.76	0.75	0.79	0.80	0.84	0.45	0.15			
Brandon				0.12	0.49	0.59	0.64	0.72	0.71	0.74	0.75	0.59	0.30			
Winnipeg				0.29	0.46	0.52	0.57	0.57	0.54	0.52	0.46	0.42	0.28			
Woodstock				0.13	0.51	0.59	0.52	0.47	0.50	0.59	0.54	0.45	0.14			
Toronto				0.01	0.30	0.66	0.72	0.71	0.70	0.67	0.56	0.55	0.52	0.33	0.01	
Lindsay				0.04	0.44	0.55	0.71	0.56	0.54	0.57	0.51	0.42	0.13	0.31	0.11	
Barrie				0.02	0.39	0.48	0.51	0.52	0.56	0.55	0.54	0.46	0.11	0.29		
Gravenhurst				0.07	0.30	0.46	0.47	0.45	0.44	0.43	0.40	0.36	0.25	0.11		
Haileybury			%	0.16	0.30	0.42	0.42	0.46	0.45	0.45	0.44	0.33	0.26			
Kingston				0.07	0.23	0.58	0.71	0.81	0.72	0.62	0.52	0.51	0.35	0.16		
Ottawa				0.12	0.36	0.43	0.55	0.57	0.55	0.54	0.53	0.48	0.26	%		
Montreal			%	0.17	0.35	0.43	0.55	0.55	0.48	0.56	0.52	0.33	0.01			
Sherbrooke				0.01	0.11	0.30	0.45	0.39	0.47	0.45	0.49	0.47	0.43	0.26		
Quebec				0.14	0.28	0.47	0.56	0.55	0.50	0.49	0.49	0.46	0.39	0.01		
Fredericton				0.01	0.24	0.46	0.51	0.56	0.55	0.49	0.42	0.43	0.36	0.34	0.05	
Charlottetown				0.01	0.28	0.33	0.47	0.52	0.52	0.50	0.42	0.37	0.39	0.18	0.02	

	Victoria.	Nanaimo.	Agassiz.	Kamloops.	Savonas.	Calgary.	Edmonton.	Medicine Hat.	Battleford.	Indian Head.	Brandon.	Winnipeg.	Woodstock.	Toronto.	Lindsay.	Barrie.	Gravenhurst.	Haileybury.	Kingston.	Ottawa.	Montreal.	Sherbrooke.	Quebec.	Fredericton.	Charlottetown.
Mean proportion for month <i>Constant sun- shine being 1</i>	0.33	0.43	0.45	0.50			0.63	0.67		0.55	0.53	0.43	0.49	0.52	0.45	0.43	0.31	0.34	0.48	0.49	0.42	0.35	0.39	0.40	0.36
Difference from average.	0.03		0.10							0.17	0.12	0.05	0.00	0.00	0.00	0.00			0.07	0.05	0.06		0.03	0.04	—
Maximum daily amount.	0.86	0.76	0.76	1.00			0.92	0.90		0.79	0.86	0.91	0.89	0.79	0.58	0.91	0.93	0.93	0.90	0.86	0.88	0.90	0.91	0.95	0.91
Date	9	18	18	31			20	18		17	17	22	29	21	18	20	20	20	21	121	20	9	31	9	22
No. of days com- pletely clouded	6	7	6	3			1	1		0	3	11	9	1	2	2	13	8	3	4	4	8	7	6	10

Thunder recorded on :

3. Brantford, Birnam, Lucknow, Clinton.
4. Cottam.
5. Gray Hill, Hillsdown, Chaplin, Cottam.
7. Aurora, Dutton, Georgetown, Strathroy, Wooler, Bon Accord, East Toronto, Otonabee, Paris, Brantford, Birnam, North Bruce, Clinton.
8. Sutton West.
9. North Bruce, Wiarton.
10. Aurora, Dutton, Georgetown, Strathroy, Westminster, East Toronto, Agincourt, Stony Creek, Paris, Brantford, Birnam, Point Clark, Owen Sound, North Bruce, Lucknow, Wiarton.
11. Otonabee, Madoc, Sutton West.
13. Brome.
30. Dorendee, Gray Hill, Alix.

Aurora recorded : -

Where the class of aurora is noted by the observer, it is given, (I) being the brightest, (IV) the feeblest in brilliancy.

1. Carcross, Sion, Emsdale, III; Huntsville, III; Hillview, IV; Gray Hill, III; Waitfield, IV; Humboldt, II; Chaplin, IV; Foxleigh, Madoc, III; Lake Talon, Chicoutimi.
2. Insinger, III; Red Willow, Hillsdown, IV; Waitfield, IV; Meota, III; Chaplin, IV; Chicoutimi, Shawinigan Falls.
3. Gray Hill, IV; Birnam, III.
8. Gray Hill, III; Red Willow, Pakan, III; Hillsdown, IV; Waitfield, II; Moose Jaw, Chaplin, III; Foxleigh, Madoc, IV; Stony Creek, II; North Bruce, Lucknow, Lake Talon.
9. St. Albans, IV; Red Willow.
10. Sion, Gray Hill, III; Red Willow, Pakan, III; Hillsdown, IV; Whitefield, III; Chaplin, III; Woodstock, N.B.
12. St. Albans, I; Brownhill, IV.
13. Insinger, II; Kneehill, Gray Hill, IV; Red Willow, Waitfield, II; Cape Magdalen.
14. Insinger, II; Cartwright, III; Huntsville, III; St. Albans, I; Gray Hill, II; Red Willow, Pakan, I; Hillsdown, IV; Waitfield, I; Moose Jaw, Chaplin, IV; Brantford, Meaford, Lucknow, Lake Talon, Shawinigan Falls, Cape Magdalene, Woodstock, N.B.
15. White Horse, I.
22. Waitfield, IV; Shawinigan Falls.
23. Waitfield, IV.
26. Brownhill, IV.
27. Insinger, IV; Waitfield, IV.
28. Insinger, IV; Cartwright, IV; Pakan, III; Waitfield, IV; Chaplin, IV.
29. Waitfield, IV.
31. Chaplin, IV.

FORECASTS FOR OCTOBER, 1907.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 1327. These were divided as follows :-

District.	No. Issued	VERIFIED.			Per- centage.
		No. Fully	No. Partly	No. Not	
Alberta	84	64	7	13	82.5
Saskatchewan	83	61	12	7	84.3
Manitoba	86	66	12	8	83.7
Lake Superior	112	82	21	9	82.5
Lower Lake Region	127	93	28	6	84.3
Georgian Bay	126	93	29	4	84.6
Ottawa Valley.	111	92	20	2	89.5
Upper St. Lawrence	111	93	19	2	89.9
Lower St. Lawrence	118	90	20	8	84.7
Gulf.	120	90	22	8	84.2
Maritime Provinces, West	122	101	11	10	87.3
Maritime Provinces, East.	122	92	21	9	84.0
Total	1327	1021	222	84	85.3

In order to obtain the percentage of verification of the productions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,

Director.

Meteorological Office, Toronto.

9th December, 1907.

DEPARTMENT OF MARINE AND FISHERIES, CANADA.

METEOROLOGICAL SERVICE.

Monthly Weather Review.

VOL. XXXI.

NOVEMBER, 1907.

No. 11.

INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

REMARKS UPON THE WEATHER.

The weather on the lower mainland and Islands of British Columbia was quite mild up to the 16th, after which somewhat lower temperatures set in and continued almost uninterruptedly to the end of the month. In most districts the mean proportion of bright sunshine exceeded the average, but there was much dull weather with frequent precipitation during the first week also during the third and last weeks. Light snow was recorded at some places on the mainland late in the month, but it soon disappeared. On the upper mainland with the exception of some cool weather on or about the 11th, or 12th, high temperatures prevailed up to the 17th. After the latter date it became somewhat cooler and continued so to the end of the month. The precipitation which was light in most localities and included some snow was recorded chiefly during the first week and from the 16th to 30th. The intervening period was comparatively fine but the mean proportion of bright sunshine was below the average.

In the Western Provinces the weather was exceedingly mild throughout the greater portion of the month, low temperatures at night, however, were of frequent occurrence and the daily range then recorded exceeded 30° in many instances. Fine weather with much bright sunshine was general and with the exception of a little light snow or rain at some stations on or about 3rd, 6th, 10th, 16th and 28th, precipitation was practically absent.

In Manitoba the weather as in the provinces immediately to the westward was unusually mild, nevertheless cold weather was recorded between the 11th, and 19th, and during the last few days when upon several nights temperatures below zero were reported. The precipitation, which varied considerably with the district, occurred chiefly on or about the 5th, 9th, 10th, 11th, 14th, 18th, 21st, 27th and 29th, and in the aggregate was quite light at most localities. Some fine weather occurred during the intervening periods, and at Brandon the proportion of bright sunshine exceeded the average. Owing to the open condition of the season ploughing was possible up to the 13th.

The weather in Ontario was mostly wet and mild during the first ten days after which somewhat finer weather set in and continued to the 20th. On the 21st, it became more unsettled and showers of rain or snow were occasionally recorded up to the end of the month. From the 18th to 27th, the weather was milder than that of the previous week, but on the last two or three days of the month it again turned colder. Sharp frosts were recorded about the 11th to 17th. On the last day of the month there was a light covering of snow in northern districts and a still lighter covering in the southern portion of the Province.

In the Province of Quebec the weather was quite mild up to the 11th and comparatively cold during the remainder of the month excepting on or about the 19th and 22nd to 24th when it was mild. The last day of the month was cold, and there were sharp frosts at night upon several occasions during the month. Dull weather prevailed and precipitation was frequent from the 3rd to 11th and 21st to 29th it being less frequent in eastern districts than elsewhere. On the last day of the month the ground was covered with snow to a depth of several inches.

In New Brunswick the weather was mild during the first ten or eleven days, also somewhat less so on or about the 14th and from the 16th to 26th. The nights, however, were generally cold and comparatively low temperatures prevailed during the intervening periods. Precipitation was frequent from the 4th to 11th and there were showers on or about the 26th and 29th snow occurring on the latter date. During the first two or three days and from the 12th to 25th there was much fine bright weather and the mean proportion of bright sunshine exceeded the average. Moderate south-east gales were recorded on the 3rd and 25th, and there was a heavy easterly gale on the 7th. Dense fogs were general on the 2nd and 23rd.

The weather in Nova Scotia was mild and open throughout the greater portion of the month and was more especially so during the first twelve days. Frosts occurred occasionally at night after the 12th but they were mostly light. Precipitation was frequent from the 4th to 15th, also from the 26th to 30th and included snow at some places on the 14th, 15th, 27th and 30th. Comparatively fine weather was general during the first three days also from the 16th to 25th. Gales were reported on the 3rd and 25th.

In Prince Edward Island the weather was mild up to the 12th, after which it became somewhat colder and on the 16th and 30th, quite cold weather was general. Frosts at night were frequent after the 10th. Much fine weather was recorded, but from the 4th to 12th it was mostly unsettled and showery, and from the 25th to 28th showers were also frequent. Snow was reported on the 12th and 28th. F. F. PAYNE.

BAROMETRIC PRESSURE.

On the Pacific and Atlantic coasts the mean atmospheric pressure for November was supernormal, whilst elsewhere in Canada, with the exception of a portion of Ontario where the normal was just exceeded, values were everywhere subnormal, with the greatest deficiency over the Prairie Provinces. The extremes of departure from average were $+0.13$ of an inch at New Westminster, B.C., and Sydney, N.S., and -0.17 of an inch at Prince Albert, Sask.

HIGH AREAS.

Nine areas of high pressure were charted during the month, but with few exceptions they were not very energetic. The drift of areas into the United States Pacific States from the ocean, and thence across the southern portion of the continent was very marked, and there was a corresponding absence of important systems sweeping down from the far northwestern portion of the continent, and as a natural sequence few pronounced cold waves were experienced.

LOW AREAS.

Eighteen areas of low pressure were chartered during the month which is a larger number than is usually recorded in November. Their general track lay far to the northward, conforming to the conditions which had been existing for some successive previous months. Three areas first appeared in the Gulf of Mexico, two off the south Atlantic coast, one in the Pacific States, well to the southward, and the remaining twelve in the northwestern portion of the continent. Some few of the areas were of much importance, but the larger number were not very energetic.

WINDS.

In British Columbia, on Vancouver Island and over the mainland, the direction was variable with ten days with strong and eight with fresh breezes and one gale.

In Alberta, the south and west directions largely predominated, with eight days with strong and nine with fresh breezes and two gales.

In Saskatchewan, the south and west directions were the most general, with seven days with strong and eight with fresh breezes and two gales.

In Manitoba, the direction was chiefly northwesterly and southwesterly, with twelve days with strong and nine with fresh breezes and one gale.

In the Lake Region, the south and west directions were the most in evidence, with two days with strong and ten with fresh breezes and six gales, the latter occurring between the 2nd and 3rd, between the 6th and 7th, the 13th, between the 20th and 21st on the 26th and between the 27th and 28th.

In the Ottawa and Upper St. Lawrence Valley, the direction was more or less variable, favouring the westerly with four days with strong and twelve with fresh breezes and four gales.

In the Lower St. Lawrence Valley and Gulf, the westerly direction was paramount but the south, north and east, were all much in evidence. There were thirteen days with strong and six with fresh breezes and four gales, the latter occurring between the 3rd and 4th, on the 7th, the 14th and between the 26th and 27th.

In the Maritime Provinces the direction was very similar to that in the Lower St. Lawrence Valley and the Gulf. There were six days with strong and thirteen with fresh breezes and three gales, the latter occurring on the 3rd, between the 6th and 7th and on the 25th.

The gales which were experienced from the Lake Region to the Maritime Provinces were not as a rule of severity; on the contrary they were for the most part of a moderate type. They were duly warned except the moderate gale which prevailed in the Gulf of St. Lawrence on the 14th.

BRIGHT SUNSHINE.

Generally speaking the duration of bright sunshine did not vary much from the average over the Western Provinces, but there was a deficiency of from 2 to 7 per cent of the possible in both Ontario and Quebec, the number of hours of sunshine ranging between 50 and 66. In the Maritime Provinces an excess was registered at Fredericton and Charlottetown: the former station recording 102 hours and the latter 104, and similar conditions probably obtained also in Nova Scotia. The largest number of hours of sunshine reported was 134 at Medicine Hat, and the least was 11 hours at Agassiz, B.C.

TEMPERATURE.

The mean temperature of November was higher than the average throughout the Western Provinces and in British Columbia, the widest departure about 10° occurring in Alberta and Saskatchewan. In Ontario, east of Lake Huron and north of Lakes Erie and Ontario, the departure was very generally negative by 1 or 2 degrees, while in Quebec and the Maritime Provinces the mean of the month ranged from just average to 2° above. From Ontario to the Maritime Provinces there were but two fairly pronounced cool periods, namely, from the 12th to 16th, and again during the last few days of the month.

The Highest and Lowest temperatures in each Province during November, 1907, were:

Yukon Territory,	50° at Carcross on 11th.	18° at White Horse on 6th.
British Columbia,	69° at Agassiz on 22nd,	— 4° at Golden on 27th.
Alberta,	70° at Lawrence on 3rd.	— 6° at Lawrence on 27th.
Saskatchewan,	62° at Gatesgarth on 6th.	— 8° at Waseca on 13th.
Manitoba,	57° at Oakbank on 1st,	17° at Oakbank on 29th.
	Morden and St. Albans on 6th.	
Ontario,	58° at Welland on 2nd.	— 1° at Lake Talon on 20th and Rockliffe on 29th.
Quebec,	57° at Cape Magdalen on 3rd.	— 5° at Brome on 30th.
New Brunswick,	62° at Sussex on 2nd,	— 8° at Moncton on 29th.
Nova Scotia,	67° at Port Hastings on 1st,	— 16° at Parrsboro on 17th,
		and Windsor on 16th.
P. E. Island,	59° at Hamilton on 4th,	— 19° at Summerside on 17th and 29th.

PRECIPITATION.

The precipitation was heavy over the Lower Mainland of British Columbia and comparatively light on the Upper Mainland, 13.2 inches were recorded at Vancouver, 8.6 at Agassiz, and but 0.5 at Kamloops. In the Western Provinces it was almost nil, ranging from just a few snow flurries in Alberta to an aggregate of 0.15 rain and about 4 inches of snow in Manitoba. Over the greater portion of Ontario the precipitation was part rain and part snow, but chiefly the former. It was fairly generally in excess of the average except near the shore lines of the lakes, where there was a small deficiency. In Quebec and the Maritime Provinces departures from the average amount were not pronounced except in Prince Edward Island, where the quantity recorded was much below average and decidedly less than in New Brunswick and Nova Scotia.

DEPTH OF SNOW.

At the close of the month there was a slight covering of snow over the whole of Quebec and over the larger portion of Ontario, while in parts of this latter Province east and north of the Georgian Bay as much as 12 inches was reported. In northern New Brunswick there was also a slight covering, but further south and including Prince Edward Island and Nova Scotia there was but a trace here and there. In Manitoba there was from half an inch to 2 inches, but further west all the prairie lands were quite bare as were also the lower levels in British Columbia.

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA NOVEMBER, 1907.

a barometer not reduced to sea level. * Stations not furnished with Reg. therm. thermometer.

STATION.	Latitude N.	Longitude W.	PRESSURE.			TEMPERATURE.				Mean amount of cloud.	DIRECTION OF WIND FROM								PRECIPITATION.																		
			Mean reduced.	Highest.	Lowest.	Range.	Mean.	Difference from average.	Years observed.	Highest.	Date.	Lowest.	Date.	Mean daily range.	Mean temperature of dewpoint.	Mean relative humidity.	No. of days completely clouded.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	C.	Total number of observations.	Mean number of days.	Direction of wind.	Velocity in m.p.h.	Days and nights.	Average.	Days.	Nights.			
BRITISH COLUMBIA			in.	in.	in.	in.																															
Alberni Beaver Creek	49 15 24	124 31	300				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Agassiz	49 11 21	124 31	292				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Atlin	49 13 13	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Barkerville	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bella Coola	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bellman (Queensella Forks)	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Burnfield	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Chilcotin (Big Creek)	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6	17	0.2	59.9	60.0	59.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chilwack	49 12 21	124 31	290				29.7	1.2	1911	30.1	6	29.6</																									

ALBERTA—	1928.	1929.	1930.	1931.	1932.	1933.	1934.	1935.	1936.	1937.	1938.	1939.	1940.	1941.	1942.	1943.	1944.	1945.	1946.	1947.	1948.	1949.	1950.	1951.	1952.	1953.	1954.	1955.	1956.	1957.	1958.	1959.	1960.	1961.	1962.	1963.	1964.	1965.	1966.	1967.	1968.	1969.	1970.	1971.	1972.	1973.	1974.	1975.	1976.	1977.	1978.	1979.	1980.	1981.	1982.	1983.	1984.	1985.	1986.	1987.	1988.	1989.	1990.	1991.	1992.	1993.	1994.	1995.	1996.	1997.	1998.	1999.	2000.	2001.	2002.	2003.	2004.	2005.	2006.	2007.	2008.	2009.	2010.	2011.	2012.	2013.	2014.	2015.	2016.	2017.	2018.	2019.	2020.	2021.	2022.	2023.	2024.	2025.	2026.	2027.	2028.	2029.	2030.	2031.	2032.	2033.	2034.	2035.	2036.	2037.	2038.	2039.	2040.	2041.	2042.	2043.	2044.	2045.	2046.	2047.	2048.	2049.	2050.	2051.	2052.	2053.	2054.	2055.	2056.	2057.	2058.	2059.	2060.	2061.	2062.	2063.	2064.	2065.	2066.	2067.	2068.	2069.	2070.	2071.	2072.	2073.	2074.	2075.	2076.	2077.	2078.	2079.	2080.	2081.	2082.	2083.	2084.	2085.	2086.	2087.	2088.	2089.	2090.	2091.	2092.	2093.	2094.	2095.	2096.	2097.	2098.	2099.	2100.	2101.	2102.	2103.	2104.	2105.	2106.	2107.	2108.	2109.	2110.	2111.	2112.	2113.	2114.	2115.	2116.	2117.	2118.	2119.	2120.	2121.	2122.	2123.	2124.	2125.	2126.	2127.	2128.	2129.	2130.	2131.	2132.	2133.	2134.	2135.	2136.	2137.	2138.	2139.	2140.	2141.	2142.	2143.	2144.	2145.	2146.	2147.	2148.	2149.	2150.	2151.	2152.	2153.	2154.	2155.	2156.	2157.	2158.	2159.	2160.	2161.	2162.	2163.	2164.	2165.	2166.	2167.	2168.	2169.	2170.	2171.	2172.	2173.	2174.	2175.	2176.	2177.	2178.	2179.	2180.	2181.	2182.	2183.	2184.	2185.	2186.	2187.	2188.	2189.	2190.	2191.	2192.	2193.	2194.	2195.	2196.	2197.	2198.	2199.	2200.	2201.	2202.	2203.	2204.	2205.	2206.	2207.	2208.	2209.	2210.	2211.	2212.	2213.	2214.	2215.	2216.	2217.	2218.	2219.	2220.	2221.	2222.	2223.	2224.	2225.	2226.	2227.	2228.	2229.	2230.	2231.	2232.	2233.	2234.	2235.	2236.	2237.	2238.	2239.	2240.	2241.	2242.	2243.	2244.	2245.	2246.	2247.	2248.	2249.	2250.	2251.	2252.	2253.	2254.	2255.	2256.	2257.	2258.	2259.	2260.	2261.	2262.	2263.	2264.	2265.	2266.	2267.	2268.	2269.	2270.	2271.	2272.	2273.	2274.	2275.	2276.	2277.	2278.	2279.	2280.	2281.	2282.	2283.	2284.	2285.	2286.	2287.	2288.	2289.	2290.	2291.	2292.	2293.	2294.	2295.	2296.	2297.	2298.	2299.	2300.	2301.	2302.	2303.	2304.	2305.	2306.	2307.	2308.	2309.	2310.	2311.	2312.	2313.	2314.	2315.	2316.	2317.	2318.	2319.	2320.	2321.	2322.	2323.	2324.	2325.	2326.	2327.	2328.	2329.	2330.	2331.	2332.	2333.	2334.	23
----------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	----

PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c.,
DURING NOVEMBER, 1907.

STATION.	RAINFALL					SNOWFALL					REMARKS
	Amount in inches	No. of Days, 01. or over	No. of Fair Days	Heaviest Fall in Month	Date	Amount in inches	No. of Days, 10 Month	Heaviest Fall	Date		
BRITISH COLUMBIA											
Alberni (Somers River)...	16.01	21	9	2.53	28						
Beaver Lake...	5.60	17	13	0.75	23 27						
Coquitlam...	15.31	16	14	2.06	28						3 Fogs.
Denman Island...	9.55	17	13	1.92	27						4 Fogs.
Goldstream Lake...	13.42	22	8	1.71	29		2				
Hartley Bay...	15.81	16	12	2.39	15	3.0	2	2.0	25		
Hornby Island...	4.22	7		1.88	28						
Naas Harbour...	15.84	19	8	1.12	7 16	1.0	3	2.0	25		Thunder 1 th.
Nanaimo...	6.74	9	20	2.20	28						
Swanson Bay...	31.89	25	5	3.53	7						
ALBERTA											
Bardo...	0.00	0	30	0.00		0.0	0	0.0			No Precipitation during month.
Beaver Hills, W.	0.03	2	27	0.02	16						
Bismark...							1		2		
Bruderheim...	0.01	1	29	0.01	4						
Bittern Lake...	0.06	1	25	0.06	16						
Counts...							1		16		
Clover Bar...											
Conjuring Creek...	0.11	2	28	0.09	3						
Dorndorf...	0.01	1	28	0.03	16						
Grassy Lake...						0.5	1	0.5	13		
Heather Brae...	0.06	2	28	0.01	16						
Islay...											
Innisfail...											
Josephsburg...						3.0	3	1.5	19		
Jumping Pound...	0.30	3	27	0.20	6		4				
Kimball...							1		24		
Lacombe...	0.01	1	28	0.01	6						
Leavings...											
Macleod...						1.5	2	1.0	13		
Magrath...						0.5	1	0.5	10		
Mayton...											
Morinville...	0.01	1	28	0.05	12		1		29		
Okotoks...	0	0	27	0	6		3				
Ponoka...	0.04	1	28	0.04	16		1		2		
Sion...	0.08	3	27	0.05	2						Aurora 10, 26, 29, 30.
Stirling...											
Saddle Lake...	0.00	0	16								
Vermilion...											
Wahamun...	0.18	3	27	0.14	6		1		29		
SASKATCHEWAN											
Arcola...											
Elm How...											
Hanley...											
Insinger...	0.01	—	23	—		4.5	6	2.0	26 29		Zero on 11th.
Last Mountain...											
Regina...	0.02	1	22	0.02	26	1.0	6	0.5	20		
MANITOBA											
Beaver...											
Cartwright...	R	0	26	R	4	3.5	3	2.0	26		Aurora 9th.
Gretna...	0.00	0	27		—	4.5	3	2.5	29		
Norquay...	0.01	1	25	0.01	7	4.0	4	2.0	27		
Rapid City...	R	0	22	R	6	3.2	7	2.0	26		Fog 0th.
Rosebank...											
ONTARIO											
Aurora...	2.16	6	23	1.49	3	2.6	4	1.8	27		
Arden...	3.49	8	20	1.86	3	3.0	2	2.0	29		
Croyden...	3.50	3	25	1.80	3	3.0	2	2.0	28		
Deer Park...	3.6	8	20	1.91	3	0.2	2	0.2	29		
Dutton...	3.56	4	21	1.35	2	0.5	2	0.5	30		
Ensdale...	2.85	10	15	0.95	2	10.8	5	3.0	29		
Ennismore...	2.70	4	22	1.31	2	6.0	2	4.0	28		
Goderich...	1.33	6	19	0.50	2	9.0	6	3.0	11		
Georgetown...	2.58	13	11	1.11	2	2.3	10	0.6	27		Aurora 3rd.
Huntsville...	2.10	5	20	0.91	2	8.5	5	3.5	28		
Lansdowne...	1.27	3		2.10	7	1.0	1	1.0	30		
MacCue...	3.21	4	25	1.88	7	2.0	2	2.0	28		
Midland...	2.64	8	17	0.82	3	11.5	5	4.0	27		
Montague...	2.62	3	25	1.78	7	1.0	1	1.0	28		
Orangeville...	4.60	7	21	2.41	3	3.3	2	2.1	14		
Princeton...	3.16	7	22	1.61	4	1.0	2	1.0	14		
Sydenham...	3.75	4	25	1.60	2	2.0	1	2.0			
Strathroy...	2.55	8	20	1.34	2	2.0	2	1.0	11 30		
Watford...	2.51	7	23	0.93	2						
Westport...	1.79	2	27	1.32	3	3.3	1	3.3	30		
Wooler...	4.43	7	29	2.05	3	6.0	2	6.0	28		
Westminster...	2.05	3	21	1.02	21		5				
Warton...	2.27	6	20	0.64	20	5.2	4	2.5	29		
NEW BRUNSWICK											
Point Escomiac...	2.57	5	24	1.29	7	0.1	1	0.1	28		Fog 26th.

PROPORTION OF TOTAL SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF NOVEMBER, 1907

STATIONS	HOURS ENDING															
	1 a.m.	2 a.m.	3 a.m.	4 a.m.	5 a.m.	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon	1 p.m.	2 p.m.	3 p.m.	4 p.m.
Victoria				0.04	0.05	0.22	0.31	0.24	0.30	0.30	0.30	0.38	0.33	0.30	0.02	
Nanaimo				0.00	0.2	0.43	0.21	0.28	0.26	0.34	0.32	0.27	0.15	0.02		
Agassiz				0.00	0.00	0.02	0.17	0.17	0.22	0.24	0.21	0.18	0.12	0.00		
Kamloops				0.00	0.06	0.21	0.28	0.32	0.34	0.41	0.40	0.32	0.12	0.00		
Savona																
Calgary																
Edmonton				0.00	0.04	0.27	0.43	0.52	0.54	0.46	0.44	0.52	0.23	T		
Medicine Hat				0.00	0.20	0.52	0.65	0.64	0.64	0.66	0.60	0.46	0.11	0.00		
Battleford																
Indian Head				0.00	0.00	0.08	0.35	0.52	0.47	0.47	0.48	0.37	0.06	0.00		
Brandon				0.00	0.00	0.17	0.31	0.40	0.50	0.48	0.64	0.48	0.25	T		
Winnipeg				0.00	0.05	0.22	0.36	0.43	0.40	0.39	0.37	0.38	0.26	0.10		
Woodstock				0.00	0.00	0.18	0.25	0.21	0.21	0.30	0.27	0.21	0.08	0.00		
Toronto				0.00	0.04	0.30	0.36	0.41	0.41	0.36	0.26	0.22	0.20	0.02		
Lindsay				0.00	0.08	0.12	0.16	0.21	0.23	0.26	0.28	0.24	0.17	0.06		
Barrie				0.01	0.03	0.23	0.26	0.26	0.33	0.32	0.20	0.26	0.12	0.00		
Gravenhurst				0.00	0.10	0.19	0.24	0.24	0.24	0.23	0.23	0.14	T	0.00		
Haileybury				0.00	0.03	0.10	0.11	0.18	0.24	0.26	0.28	0.27	0.24	0.06		
Kingston				0.00	0.03	0.12	0.20	0.26	0.26	0.29	0.20	0.25	0.17	0.02		
Ottawa				0.00	T	0.14	0.27	0.28	0.26	0.31	0.37	0.34	0.19	0.01		
Montreal				0.00	0.00	0.06	0.21	0.33	0.35	0.28	0.26	0.21	0.07	0.00		
Sherbrooke				0.00	0.14	0.15	0.18	0.20	0.30	0.33	0.32	0.26	0.11	0.03		
Quebec				0.00	0.02	0.17	0.26	0.20	0.33	0.27	0.20	0.21	0.14	0.04		
Fredericton				0.00	0.03	0.23	0.35	0.48	0.48	0.46	0.43	0.39	0.11	0.13		
Charlottetown				0.01	0.10	0.25	0.39	0.39	0.41	0.47	0.51	0.45	0.34	0.14		

	Victoria.	Nanaimo.	Agassiz.	Kamloops.	Savona.	Calgary.	Edmonton.	Medicine Hat.	Battleford.	Indian Head.	Brandon.	Winnipeg.	Woodstock.	Toronto.	Lindsay.	Barrie.	Gravenhurst.	Haileybury.	Kingston.	Ottawa.	Montreal.	Sherbrooke.	Quebec.	Fredericton.	Charlottetown.	
Mean proportion for month <i>Constant sunshine being 1</i>	0.27	0.23	0.15	0.27			0.40	0.49		0.31	0.36	0.33	0.18	0.27	0.19		0.17	0.19	0.23	0.23	0.23	0.21	0.21	0.36	0.37	
Difference from average.	0.08		0.04							0.06	0.03	0.01	0.07	0.01	0.06			0.04	0.07	0.07		0.03	0.04			
Maximum daily amount.	0.89	0.76	0.62	0.93			0.90	0.87		0.74	0.80	0.81	0.67	0.81	0.59		0.75	0.91	0.91	0.85	0.79	0.82	0.91	0.92	0.96	
Date	10	9	9	30			27	11		5	7	28	19	16	1.23		23	21	23	23	21	29	24	17	24	16
No. of days completely clouded	10	15	1	13			5	5		5	6	14	12	11	11		14	12	13	12	13	11	13	10	9	

Aurora recorded :

Where the class of aurora is noted by the observer, it is given, *I* being the brightest, (*IV*) the feeblest in brilliancy.

1. Waitetield, *IV*.
2. Waitetield, *IV* ; Meota, *III*.
3. Cartwright, Georgetown, Waitetield, *I* ; Threehills Creek, *IV* ; Red Willow, Pakan, *III* ; Hillsdown, *IV* ; Gray Hill, *IV* ; Grenfell, *II* ; Meota, *II* ; Hillview, *I* ; St. Albans, *II* ; Bruce Mines, *III* ; Minnedosa, *I* ; Parry Sound, *I*.
4. Sutton West, Swift Current.
5. Waitetield, *IV* ; Kenora, *IV* ; Regina, *IV*.
6. Minnedosa, *I*.
7. Waitetield, *IV* ; Pakan, *III* ; Gray Hill, *IV*.
8. Waitetield *IV* ; Red Willow, Minnedosa, *III*.
9. Cartwright, Waitetield, *I* ; Threehills Creek, *IV* ; Red Willow, Pakan, *III* ; Hillsdown, *III* ; Gray Hill, *III* ; St. Albans, *I* ; Birnam, *II* ; Madoc, *IV*.
10. Sion, Waitetield, *IV* ; Pakan, *III* ; Meota, *IV* ; Birnam, *IV* ; Swift Current.
11. Waitetield, *III* ; Threehills Creek, *III* ; St. Albans, *II* ; Prince Albert, *I*.
12. Meota, *IV* ; Regina, *IV*.
16. Yarmouth, *IV*.
22. Regina, *III*.
23. Meota, *IV*.
26. Sion, Minnedosa, *IV*.
29. Sion, Hillsdown, *IV*.
30. Sion, Hillsdown, *IV* ; Minnedosa, *IV*.

Thunder recorded on :

2. Gray Hill.
18. Winter Harbour.

FORECASTS FOR NOVEMBER, 1907.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 1299. These were divided as follows:—

District	No. Issued.	VERIFIED.			Per- centage.
		No. Fully	No. Partly	No. Not	
Alberta	79	94	17	8	79.1
Saskatchewan	80	35	18	7	84.0
Manitoba	79	63	12	4	87.3
Lake Superior	106	76	26	5	83.5
Lower Lake Region	126	82	33	11	78.2
Georgian Bay	126	83	30	13	77.8
Ottawa Valley	120	86	29	5	83.7
Upper St. Lawrence	119	80	26	4	85.7
Lower St. Lawrence	116	82	22	12	80.2
Gulf	116	78	25	13	78.0
Maritime Provinces, West	116	82	26	9	84.5
Maritime Provinces, East	116	77	30	9	79.3
Total	1299	907	262	100	81.1

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,
Director

Meteorological Office, Toronto,
31st December, 1907.

DEPARTMENT OF MARINE AND FISHERIES, CANADA.

METEOROLOGICAL SERVICE.

Monthly Weather Review.

VOL. XXXI.

DECEMBER, 1907.

No. 12 10/114

INTRODUCTION.

In compiling the present Review the principal data made use of are the telegraphic reports of observations received at this office for the purpose of weather forecasting, and reports by mail from voluntary observers and storm signal agents. For the material used in tracing the paths of areas of high and low pressure in the United States, we are indebted to the Chief of the Weather Bureau, Washington, D.C.

REMARKS UPON THE WEATHER.

The weather in British Columbia was comparatively mild in most districts, but at Alberni and Rivers Inlet it was slightly colder than usual. Over the lower mainland there was much dull weather and rain was of frequent occurrence during the first, second and fourth weeks. High winds were also frequent in this portion of the province. On the upper mainland the chief wet periods were from the 4th to 10th, 15th, 16th, and 21st to 28th, much of the precipitation being snow. Throughout the month there was much dull weather over the upper mainland.

In the Western Provinces the weather was unusually mild and was more especially so during the first week when temperatures exceeding 50° were quite frequent in Alberta. After the 7th lower temperatures prevailed and from the 16th to 20th and 23rd to 31st temperatures below zero were recorded on many days. Somewhat dull weather was reported on or about the 8th and 13th to 19th when night falls of snow occurred; but with these exceptions the weather was exceedingly fine and the total precipitation was quite light. At the end of the month the ground was bare in Alberta, whilst in Saskatchewan it was covered with snow to a depth of one to six inches.

The weather in Manitoba was quite mild from the 2nd to 7th, 11th to 15th and 19th to 23rd, and the mean temperature for the month was considerably above the average. The intervening periods and the last week of the month were comparatively cold, temperatures below zero being occasionally recorded. Although the sky was overcast more frequently than usual, the precipitation, which occurred chiefly on or about the 2nd, 4th, 9th, 15th to 18th, 24th and 28th was generally quite light. The depth of snow on the ground on the last day of the month was from one to six inches.

In Ontario the weather, though cool on the 3rd, 4th, 5th and 13th at many places, was comparatively mild throughout the greater portion of the month, and the mean temperature was above the average. In most localities the weather was fair during the first week also from the 16th to 21st. Clouded skies with frequent falls of rain or snow were general about the 7th to 15th and 22nd to 31st; and at some places there was also precipitation on the 1st. Many of the falls recorded were snow, but much of it melted and on the 31st the ground was covered to a depth of one inch in south-western districts and fifteen inches in northern and north-western districts.

In the Province of Quebec the weather was characterised by high mean temperature, quite mild conditions being general during the second week, also from the 23rd to 29th, and moderately cold weather at most places on all other dates. In most districts clouded skies were exceedingly frequent, and in the eastern portion of the Province precipitation which was chiefly snow was recorded on most days between the 1st and 4th, 8th and 16th, 24th and 31st. At western stations the falls were much less frequent, the chief dates being 10th, 11th, 16th, 17th, 18th, 28th and 31st. The depth of snow on the 31st varied between five and eleven inches.

In New Brunswick the weather was mostly fine from the 3rd to 9th, 11th to 22nd and 25th to 28th. Precipitation occurred in most localities on or about the 2nd, 11th, 16th, 24th and 30th, the falls, which included much snow, being comparatively heavy. Somewhat low temperatures were recorded during the first week, also about the 16th, 20th, 23rd and 27th, but with these exceptions

the weather was quite mild and the mean temperature was considerably above the average. The covering of snow on the ground on the 31st was at most places quite light and in some districts the ground was bare.

The weather in Nova Scotia was quite mild throughout the greater portion of the month, temperatures exceeding 40° occurring occasionally and 50° being also exceeded at some places on or about the 11th, 14th, 25th, 29th and 31st. The precipitation which was heavy at most stations was recorded on or about the 2nd, 3rd, 5th, 12th, 16th, 17th, 24th, 27th, 29th and 31st, it being mostly rain. Clouded skies prevailed and high winds were frequent. During a southerly gale on the 23rd thunder and lightning was recorded at some places. Sleighing was possible during the first week, but soon after the 7th, the ground was bare and continued so to the end of the month.

In Prince Edward Island the weather was mostly cloudy and exceedingly mild there being little cold weather, excepting about the 3rd to 6th, although the night temperatures were occasionally low. The precipitation which was recorded chiefly on or about the 2nd, 12th, 15th, 16th, 24th, 26th, 29th and 31st, was heavy in the aggregate and included a large proportion of snow. On the 15th and for some days later there was good sleighing, but by the 23rd the ground was practically bare.—F. F. PAVSE.

BAROMETRIC PRESSURE.

The mean atmospheric pressure for December was below the normal throughout Canada. The average departure was -0.10 of an inch and the extreme -0.25 of an inch at Kamloops, B.C. The Western Provinces and British Columbia showed the greatest divergence from average.

HIGH AREAS.

Eight areas of high pressure were traced during the month, four first appearing in the West Pacific States, two in Northern Alberta, and two from the neighbourhood of the Yukon Territory. The areas were almost without exception unusually feeble and accompanied by very little cold weather, in striking contrast to the conditions which prevailed in December of the previous year, when a succession of exceptionally important high areas swept across the continent from the Yukon Territory, attended by extreme cold.

LOW AREAS.

Thirteen areas of low pressure were traced during the month. Eight first moved into Canada from the Pacific Ocean, far to the northward, five into the Pacific States far to the southward, and one Atlantic Ocean area passed a little to the southward of Nova Scotia. The pronounced northerly course of so many of the areas was very marked, and conformed to the conditions which have been in existence for several months. Four of the areas which travelled over the Yukon Territory afterwards passed very far to the northward over the continent, apparently crossing Hudson's Bay. The majority of the areas were of much importance being usually attended in their eastward advance over the Dominion by heavy precipitation, chiefly as rain, and also by frequent strong winds and gales.

WINDS.

In British Columbia, on Vancouver Island and over the mainland the direction was largely variable, favouring somewhat the easterly. There were six days with strong and ten with fresh breezes, and five gales.

In Alberta the south and west directions predominated, with five days with strong and ten with fresh breezes, and two gales.

In Saskatchewan the south and west directions were the most prevalent, with four days with strong and ten with fresh breezes, and six gales.

In Manitoba the direction was more or less variable, favouring slightly the south and west, with nine days with strong and eight with fresh breezes, and one gale.

In the Lake Region the south and west directions were paramount, with nine days with strong and nine with fresh breezes, and eight gales.

In the Ottawa and Upper St. Lawrence Valleys the westerly direction was much in evidence, with twelve days with strong and seven with fresh breezes, and four gales.

In the Lower St. Lawrence Valley and the Gulf the westerly direction usually prevailed, with nine days with strong and eight with fresh breezes, and six gales.

In the Maritime Provinces the north and west directions were the most general, with six days with strong and nine with fresh breezes and seven gales, the latter occurring on the 2nd, between the 5th and 6th, between the 10th and 11th, on the 15th, between the 23rd and 24th, the 27th, and between the 30th and 31st.

The display of storm signals was discontinued to the Lake Region after the 10th. Navigation by that time was also pretty well closed in the Lower St. Lawrence Valley and the Gulf, only remaining open at ports in the Maritime Provinces. The gales of the month were all warned, except the moderate storm of the 27th.

TEMPERATURE.

In British Columbia, over the northwestern and northern portion of the Province, the temperature was average or slightly below, elsewhere throughout the Dominion it was above the average and nearly everywhere to a marked extent. In the Western Provinces the positive departure ranged from 5 to 9 degrees; in Ontario from 2 to 7 degrees; in Quebec from 5 to 8 degrees, and in the Maritime Provinces from 3 to 8 degrees.

The Highest and Lowest temperatures in each Province during December, 1907, were:

British Columbia,	64° at River Inlet on 2nd,	— 23° at Chilcotin on 17th and on 31st at Golden.
Alberta,	66° at Lethbridge on 5th.	— 27° at Beckville on 31st.
Saskatchewan,	55° at Gatesgarth on 4th,	— 29° at Meota on 27th.
Manitoba,	46° at Morden on 5th,	— 31° at Dauphin on 27th.
Ontario,	58° at Stony Creek on 8th,	— 20° at Judge on 26th.
Quebec,	55° at Cape Chatte on 10th,	— 16° at Chicoutimi on 29th.
New Brunswick,	58° at Chatham on 11th,	— 6° at Sussex on 4th.
Nova Scotia,	58° at Sydney & Truro on 11th,	— 6° at Truro on 22nd,
P. E. Island,	54° at Charlottetown on 11th,	— 9° at Summerside on 21st.

PRECIPITATION.

In British Columbia, Cariboo reported an excess of precipitation equivalent to nearly 90 per cent, but elsewhere in the Province there was a general deficiency amounting at Victoria to 52 per cent. In the Western Provinces, in the southern portion of Saskatchewan, there was a positive departure of 200 per cent at Regina and 79 per cent at Swift Current, elsewhere the negative departure was very well marked; Winnipeg and Medicine Hat recorded deficiencies of 98 and 63 per cent respectively. In Ontario the distribution of precipitation was every variable, some localities experiencing much less than the average. The most noticeable extremes were positive departures of 98 per cent at Toronto and 46 per cent at Ottawa, and negative departures of 49 per cent at White River and 94 per cent at Port Arthur. In Quebec the average amount was exceeded in all localities, more so in the western than in the eastern portion; Montreal recorded 60 per cent above the usual quantity. In the Maritime Provinces, in the region of the Bay of Fundy and very locally, elsewhere, the precipitation was less than the average, but over the large remaining portions of the Provinces the average was exceeded. The noticeable departures were a deficiency of 39 per cent at St. John and 79 per cent at Chatham, and an excess of 25 per cent at Halifax and Charlottetown.

DEPTH OF SNOW ON GROUND.

At the close of the year there was a remarkable absence in the Dominion of any pronounced depth of snow on the ground, and in many localities there was none. Considering the Provinces separately, the conditions were:—British Columbia, none on the low lands and apparently little on the mountains; Alberta none; Saskatchewan and Manitoba 1 to 6 inches; Ontario from a trace to 15 inches; Ottawa recorded the 15 inches, whereas White River, north of Lake Superior gave only 4 inches; Quebec from 5 to 11 inches; the Maritime Provinces 1 to 3 inches in northern and none in southern localities.

BRIGHT SUNSHINE.

All parts of Canada had less sunshine than the average, the largest deficiencies occurring in Ontario and Manitoba. The largest aggregate records were obtained at Winnipeg, Lacombe, Alta., and Medicine Hat, being respectively 78, 82 and 85 hours. The smallest records were in British Columbia where Victoria, Nanaimo and Agassiz recorded respectively 27, 33 and 31 hours of sunshine.

PRESSURE, TEMPERATURE, WIND AND PRECIPITATION AT STATIONS IN THE DOMINION OF CANADA. DETEMBER, 1907.

a barometer not reduced to sea level.

[illegible]

YUKON:—

ALBERTA—

Athabasca Landing	54	19 113 17	1650	29 91 30 48 29 11 1 37	40 7	3 56 0	3	21 0	31 23 4	0 17	0 15	6 25 0 0 3
Abx.	32	21 113 10	1542	29 91 30 48 29 11 1 37	40 7	0 1 13 45 2	1	15 2	31 13 7	1 11	0 02 0 35	7 21 0 0 0
Backfalls	32	21 113 17	2576	29 91 30 48 29 11 1 37	40 7	1 7 6	1	13 0	31 13 7	0 33	0 12	6 25 0 0 0
Bon Accord	38	23 113 21	2576	29 91 30 48 29 11 1 37	40 7	6 31 3	1	16 5	31 17 1	0 30	0 2	7 21 0 0 0
Calgary	30	23 113 21	3380	29 81 30 42 29 20 1 22	29 6	1 2 23 35 0	1	8 0	31 21 3	0 10	0 30 0 06	3 25 0 0 1
Cardston	30	12 113 18			29 6	6 61 0	1	6 0	31 22 1	0 10	0 20	3 25 0 0 0
Didsbury	31	26 113 18			29 6	1 11 0	1	20 0	31 17 3	0 15	0 1	2 20 0 0 0
Edmonton	22	23 113 22	2576	29 91 30 48 29 11 1 37	40 7	1 11 0	1	20 0	31 17 3	0 15	0 1	2 20 0 0 0
Edmonton	23	23 113 20	2168	29 82 30 35 29 10 1 16	29 1	5 2 21 30 0	1	18 6	31 06 1	0 36	0 17 0 12	9 22 5 0 0
Fort Vermilion	23	23 113 20	2168	29 82 30 35 29 10 1 16	29 1	5 2 21 30 0	1	18 6	31 06 1	0 36	0 17 0 12	9 22 5 0 0
Gray Hill	32	15 113 33	2735	29 91 30 48 29 11 1 37	40 7	3 31 0	22	33 6	30 20 1	0 20	0 20	1 21 8 0 0
Gravelton	32	15 113 33	2735	29 91 30 48 29 11 1 37	40 7	3 31 0	22	33 6	30 20 1	0 20	0 20	1 21 8 0 0
Hillstown	32	11 113 51	2052	29 91 30 48 29 11 1 37	40 7	1 37 0	1	11 0	31 18 5	0 05	0 02	2 20 0 0 0
High River	30	11 113 29	3384	29 91 30 48 29 11 1 37	40 7	3 38 0	1	11 0	31 18 5	0 73	0 20	7 21 2 0 0
Kneehill	31	11 113 22			29 6	1 11 0	1	11 0	31 18 5	1 1	0 1	5 20 0 0 0
Lacbridge	30	12 113 22			29 6	1 11 0	1	11 0	31 18 5	0 30	0 61	1 30 0 0 0
Lacombe	32	28 113 11	2783	29 91 30 48 29 11 1 37	40 7	1 37 0	1	11 0	31 18 5	0 72	0 10	5 20 0 0 0
Lacombe	32	28 113 11	2783	29 91 30 48 29 11 1 37	40 7	1 37 0	1	11 0	31 18 5	0 72	0 10	5 20 0 0 0
Madreine Hat.	30	11 113 27	2161	29 83 30 36 29 07 1 40	29 6	5 3 23 61 0	1	8 6	31 21 2	0 21	0 10	7 21 0 0 3
Medicine Hat	30	11 113 27	2161	29 83 30 36 29 07 1 40	29 6	5 3 23 61 0	1	8 6	31 21 2	0 21	0 10	7 21 0 0 3
Packard River Crossing	30	26 114 11			29 1	1 12 0	21	21 0	31	0 13	1 38	7 21 0 0 0
Packard River Crossing	30	26 114 11			29 1	1 12 0	21	21 0	31	0 13	1 38	7 21 0 0 0
Paken (Victoria)	34	0 112 31			11 2	3 45 0	1	21 5	18 25 7	0 45	0 25	3 27 0 0 0
Red Deer	52	16 113 19			30 1	9 30 0	4	1 0	20 17 3	0 68	0 35	6 5 1 0 1
Red Willow	32	27 112 20			30 1	9 30 0	4	1 0	20 17 3	0 80	0 36	5 26 1 0 1
Shoofishway	31	30 113 11			14 8	6 38 0	3	25 0	17 21 9	0 34	0 22	2 25 3 0 1
Threehills Creek	34	0 113 0			26 3	1 33 0	2	5 0	17 21 3	0 35	0 20	1 27 0 0 0
Taber	34	0 113 0			19 3	5 37 0	5	11 0	31 21 2	0 87	0 15	1 24 0 0 0
Wetaskiwin	32	28 113 23	2180	29 91 30 48 29 11 1 37	40 7	2 30 5	4	18 0	27 19 7	0 67	0 25	1 24 8 0 3
Whitefield	33	29 111 38			15 6	2 30 5	4	18 0	27 19 7			

SASKATCHEWAN—

Alameda	49	15 102 17	1882	29 80 30 42 29 28 1 11	13 7	12 32 0	5	21 0	27 18 5	1 43	0 70	5 26 1 3 0
Battleford	52	11 108 20	1620	29 80 30 42 29 28 1 11	12 7	5 3 17 31 0	5	21 0	27 18 6	0 10	0 01 0 20	6 25 0 0 0
Broadview	30	25 102 33	1860	29 80 30 42 29 28 1 11	12 7	5 3 17 31 0	5	21 0	27 18 6	1 5	0 00 0 20	4 5 3 0 2
Charlin	30	26 106 39	2202	29 80 30 42 29 28 1 11	11 1	3 8 24 48 0	4	22 0	31 21 9	1 25	0 10	8 23 1 0 2
Camington Manor	49	13 102 2	2044	29 80 30 42 29 28 1 11	13 8	7 32 0	5	18 0	26 21 6	1 25	0 10	8 23 1 0 2
Estevan	49	12 103 4	1808	29 80 30 42 29 28 1 11	22 2	1 17 0	6	0 9 18 0	27 22 2	1 57	0 70	20 11 0 0 2
East End	49	31 108 49			22 2	1 17 0	6	0 9 18 0	27 22 2	1 57	0 70	20 11 0 0 2
Foxleigh	30	27 104 29	1879	29 80 30 42 29 28 1 11	16 4	6 0 11 35 0	4	21 0	27 23 9	0 0	0 20	1 3 0 0 0
Gatesgarth	30	29 105 0	1957	29 80 30 42 29 28 1 11	16 4	6 0 11 35 0	4	21 0	27 23 9	0 0	0 20	1 3 0 0 0
Greenfield	52	12 105 9			16 4	6 0 11 35 0	4	21 0	27 23 9	0 0	0 20	1 3 0 0 0
Humboldt	33	18 106 0	1924	29 80 30 42 29 28 1 11	11 7	7 3 29 48 0	5	27 0	27 21 4	0 60	0 10	3 25 0 0 0
Indian Head	30	25 103 40	1924	29 80 30 42 29 28 1 11	13 1	4 45 2	6	26 4	27 21 4	0 65	0 08 0 10	4 27 0 0 0
Lloydminster	30	13 106 12			13 1	4 45 2	6	26 4	27 21 4	0 43	0 30	2 29 0 0 1
Leamberg	30	13 106 12			13 1	4 45 2	6	26 4	27 21 4	0 43	0 30	2 29 0 0 1
Moose Jaw	30	21 105 35	1715	29 80 30 42 29 28 1 11	15 9	4 2 12 30 0	4	21 0	25 19 2	0 21	0 21	1 26 3 0 7
Moosomin	31	0 101 3	1884	29 80 30 42 29 28 1 11	11 5	1 13 0	1	20 0	27 21 2			
Neota	31	0 101 3	1884	29 80 30 42 29 28 1 11	11 5	1 13 0	1	20 0	27 21 2			
Onion Lake	31	0 101 3	1884	29 80 30 42 29 28 1 11	11 5	1 13 0	1	20 0	27 21 2			
Prince Albert	35	10 106 0	1132	29 80 30 42 29 28 1 11	11 6	7 3 24 48 0	6	22 5	27 25 1	0 16	0 1	5 0 0 0
Qu'Appelle	30	30 103 17	2115	29 80 30 42 29 28 1 11	11 6	7 3 24 48 0	6	22 5	27 25 1	0 16	0 1	5 0 0 0
Régina	30	27 104 37	1885	29 80 30 42 29 28 1 11	2 1	3 6 21 51 0	4	12 0	31 19 6	1 1	0 0	2 1 0 0 0
St. Peter's	32	0 105 6	1870	29 80 30 42 29 28 1 11	11 9	1 51 0	5	22 5	27 21 4	0 2	0 10	1 28 1 0 1
Swift Current	30	20 107 15	2129	29 80 30 42 29 28 1 11	11 9	1 51 0	5	22 5	27 21 4	0 2	0 10	1 28 1 0 1
Saskatoon	32	15 106 30	1574	29 80 30 42 29 28 1 11	13 1	1 46 0	5	25 3	28 20 2	0 10	0 20	2 29 3 0 3
Willow Bunch	49	24 105 38			18 2	1 38 0	4	12 0	3 22 8	0 10	0 10	1 27 0 0 0
Waseca	53	6 109 29			13 1	1 46 0	5	25 3	28 20 2	0 10	0 20	2 29 3 0 3
Waddington					13 1	1 46 0	5	25 3	28 20 2	0 10	0 20	2 29 3 0 3
Manitoba	49	14 30 20			13 2	5 15 0	5	22 0	28 19 1	0 10	0 20	2 29 3 0 3
Almasipp	49	31 30 57	1176	29 80 30 42 29 28 1 11	10 7	5 0 2 38 9	6	25 2	25 21 6	0 20	0 20	1 21 0 0 0
Brandon	30	35 101 1	1503	29 80 30 42 29 28 1 11	12 0	5 0 2 38 9	6	25 2	25 21 6	0 20	0 20	1 21 0 0 0
Birtle	49	32 30 50	1258	29 80 30 42 29 28 1 11	12 0	5 0 2 38 9	6	25 2	25 21 6	0 20	0 20	1 21 0 0 0
Carberry	49	31 30 50			12 0	5 0 2 38 9	6	25 2	25 21 6	0 20	0 20	1 21 0 0 0
Carmen	49	33 30 50			12 0	5 0 2 38 9	6	25 2	25 21 6	0 20	0 20	1 21 0 0 0
Cypress River	31	15 30 30			12 1	7 15 0	5	31 0	25 18 8	0 30	0 00	1 28
Dauphin	49	33 30 50			6 1	0 1 22 34 0	3	33 0	25 17 5	0 35	0 23 0 2	3 25 1 0 1
Fort Osborne	49	33 30 50			12 0	5 0 2 38 9	6	25 2	25 21 6	0 20	0 20	1 21 0 0 0
Hillview	49	33 30 50			13 1	4 6 5 24 11 6	5	20 6	25 19 8	0 26	0 41 0 13	6 21 1 0 1
Minnedosa	30	15 30 50	1029	29 80 30 42 29 28 1 11	13 1	4 6 5 24 11 6	5	20 6	25 19 8	0 26	0 41 0 13	6 21 1 0 1

PRECIPITATION AT STATIONS REPORTING RAIN, SNOW, WEATHER, &c.,
DURING DECEMBER, 1907.

STATION.	RAINFALL					SNOWFALL					REMARKS.
	Amount in inches	No. of Days, 10, or over	No. of Fair Days	Heaviest Fall in Month	Date	Amount in inches	No. of Days, in Month	Heaviest Fall in Month	Date.		
BRITISH COLUMBIA—											
Alberni (Somas River),	10.72	19	12	1.82	3	3.2	4	1.2	28		
Beaver Lake,	7.23	18	13	1.87	12	1.0	2	0.5	12	31	
Coquitlam,	10.52	11	21	1.97	20	2.0	1	2.0	31		
Denman Island,	11.42	12	19	2.00	25	1.5	2	1.0	30		
Goldstream Lake,	9.91	20	11	1.35	13	21.0	6	10.0	28		
Hartley Bay,											
Hornby Island,	9.38	23	8	1.92	4						
Naas Harbour,	5.01	8	23	1.31	2	7.0	3	1.0	20		
Nanaimo,	6.92	8	23	1.62	13	1.0	1	1.0	31		
Swanson Bay,	21.98	19	12	2.61	3		4				
ALBERTA—											
Bardo,						3.3	3	2.0	23		
Beaver Hills, W.	0.01	1	24	0.01	5	8.8	6	3.5	23		
Bismark,						7.9	5	3.5	26		
Bruderheim,											
Bittern Lake,	0.02	1	26	0.02	5	10.3	4	1.5	23	-25.0 on 31st.	
Coutts,						0.5	1	0.5	8		
Clover Bar,											
Conjuring Creek,						7.5	5	3.0	15		
Dorelee,						9.3	4	6.0	25		
Grassy Lake,						1.0	2	0.5	8	11	
Heather Brae,						6.8	7	2.3	26	-15.0 on 31st.	
Islay,											
Innisfail,											
Josephsburg,											
Jumping Pound,	0.31	2	25	0.31	15						
Kimball,						2.0	1	2.0	8		
Lacombe,						2.0	1	2.0	19		
Leavings,											
Macleod,											
Magrath,						3.0	5	1.0	15		
Mayton,											
Morinville,						2.0	4	0.8	12		
Okotoks,						6.5	4	2.5	8		
Ponoka,						7.5	4	5.0	27	10.0 on 31st.	
Sion,						5.0	5	1.5	26	13.0 on 31st.	Aurora on 4.
Stirling,										5, 10.	
Saddle Lake,						4.0	1	1.0	8		
Vermilion,						6.0	4	3.0	8		
Wabamun,						12.0	9	4.5	24		
SASKATCHEWAN—											
Arcola,											
Elm How,						11.0	4	6.5	24		
Hanley,											
Insinger,						10.6	4	6.0	26	Ice 14 inches thick on 25th.	
Last Mountain,						6.0	1	6.0	27		
Regina,						4.5	4	2.0	26		
MANITOBA—											
Beaver,											
Cartwright,						2.3	4	1.0	24		
Gretna,						3.5	2	2.0	16		
Norquay,						1.8	3	0.8	26		
Rapid City,						2.7	5	1.1	16	-20.0 on 23rd.	
Rosebank,											
ONTARIO—											
Aurora,	0.96	3	20	0.17	9	28.3	8	11.3	15		
Arden,	2.08	6	20	0.53	10	23.0	7	10.0	15		
Croyden,	0.22	4	25	0.70	27	29.0	3	12.0	11		
Deer Park,	3.22	8	20	0.97	30	13.3	5	10.0	16		
Dutton,	3.10	3	20	1.20	29	13.0	8	2.5	10		
Emsdale,	0.67	3	17	0.41	10	27.8	12	6.0	2		
Ennismore,	0.85	3	26	0.30	30	15.0	4	6.0	14		
Goderich,	1.40	3	21	0.80	9	13.0	8	2.0	—		
Georgetown,	1.32	7	14	0.55	30	31.9	13	7.5	23		
Huntsville,	0.80	2	20	0.45	9	22.0	9	5.5	31		
Lausdowne,	3.05	3	24	1.70	23	9.0	4	4.0	11		
MacCue,	0.65	1	26	0.65	27	19.5	4	13.0	15		
Midland,						34.3	8	7.0	11	29	
Montague,	1.90	2	25	0.98	23	13.5	4	8.0	15		
Orangeville,	0.65	1	17	0.65	9	39.7	13	15.0	15		
Princeton,	3.11	3	21	1.87	30	16.0	4	11.0	15		
Sydenham,	3.50	5	25	1.50	23	22.0	3	12.0	14		
Strathroy,	4.43	7	17	1.51	23	27.0	9	7.0	10		
Watford,	3.12	4	27	0.30	29	—	—	—	—		
Westport,	0.70	2	25	0.35	9	25	4	7.0	11		
Wooler,	1.79	5	23	0.56	28	21.0	5	10.0	15		
Westminster,	1.62	4	25	0.66	28	9.0	2	6.0	16		
Warton,	0.85	3	17	0.31	23	24.5	11	3.0	1-18		
NEW BRUNSWICK—											
Point Escuminac,	0.24	4	24	0.09	11	13.5	4	1.2	2	Fog 28th.	

PROPORTION OF HEIGHT SUNSHINE REGISTERED IN EACH HOUR OF THE DAY DURING WHICH THE SUN WAS ABOVE THE HORIZON IN THE MONTH OF DECEMBER, 1907.

STATIONS.	HOURS ENDING													
	6 a. m.	7 a. m.	8 a. m.	9 a. m.	10 a. m.	11 a. m.	Noon	1 p. m.	2 p. m.	3 p. m.	4 p. m.	5 p. m.	6 p. m.	7 p. m.
Victoria				02	08	10	15	16	17	14	05			
Nanaimo				8	12	25	23		16	15	03			
Agassiz				05	13	18	24	23	15	03	04			
Kamloops				02	18	21	20	31	31	05	00			
Calgary			03	10	16	41	47	5	32	12	00			
Fort Vermilion														
Lacombe				01	28	46	2	53	41	22	20			
Medicine Hat														
Edmonton				10	31	55	59	45	20	28	01			
Rutherford														
Indian Head				00	10	27	38	40	43	24	00			
Brandon				02	12	22	36	35	30	40	28			
Winnipeg				05	30	40	49	46	38	33	09			
Woodstock				10	19	23	31	27	25	15	11			
Toronto				05	10	18	21	26	25	21	09			
Lindsay				09	12	20	19	21	19	18	12	04		
Barrie				01	06	16	16	18	15	15	04			
Gravenhurst				00	01	07	10	12	12	05	00			
Haileybury				09	16	27	27	25	22	24	15			
Kingston			0	09	19	22	23	25	26	26	16	01		
Ottawa				08	23	28	33	28	20	13	05			
Montreal				01	13	20	24	19	18	13	02			
Sherbrooke				08	15	24	28	35	26	25	13			
Quebec				05	15	20	28	31	29	20	09			
Fredericton				09	17	25	29	33	34	25	16			
Charlottetown			01	22	28	27	34	30	30	20	15	01		

	Victoria.	Nanaimo.	Agassiz.	Kamloops.	Calgary.	Fort Vermilion.	Lacombe.	Medicine Hat.	Edmonton.	Indian Head.	Brandon.	Winnipeg.	Woodstock.	Toronto.	Lindsay.	Barrie.	Gravenhurst.	Haileybury.	Kingston.	Ottawa.	Montreal.	Sherbrooke.	Quebec.	Fredericton.	Charlottetown.	
Mean proportion for month <i>Constant sunshine being 1</i>	0.10	0.13	0.12	0.17			0.31	0.31	0.30	0.22	0.26	0.31	0.18	0.15	0.11	0.10	0.05	0.19	0.19	0.18	0.14	0.20	0.19	0.21	0.24	
Difference from average.	— .05	—	— 0.03	—			—	—		— 0.02	— 0.08	— 0.04	— 0.02	— 0.08	— 0.06	— 0.06	—	—	— 0.06	— 0.01	— 0.13	—	—	— 0.13	—	
Maximum daily amount.	0.78	0.73	0.71	0.65			0.86	0.80	0.88	0.65	0.83	0.81	0.77	0.77	0.70	0.70	0.51	0.80	0.82	0.78	0.72	0.85	0.85	0.92	0.91	
Date.	15	7	15	17			30	10	18	4	18	19	20	4	12	22	6	12	22	17	21	26	13	21	29	29
No. of days completely clouded.	16	22	20	12			6	0	6	13	10	14	15	15	19	20	26	14	19	17	17	17	16	14	15	

Aurora recorded :—

Where the class of aurora is noted by the observer, it is given, (I) being the brightest, (IV) the feeblest in brilliancy.

1. Insinger, III.
3. Meota, IV; Insinger, III.
4. Waitefield, III; Threehills Creek, III; Red Willow, Pakan, III; Hillsdown, IV; Estevan, Chaplin, IV; Saskatoon, III; Moose Jaw, St. Albans, II; Kenora, IV; Lake Talon, Cape Chatte, III; Sion, Insinger, III; Cartwright, IV.
5. Waitefield, III; Pakan, III; Hillsdown, IV; Alameda, II; Waseca, Sion.
6. Waitefield, IV; Threehills Creek, IV; Pakan, III; Waseca, Insinger, IV.
7. Waseca, Treherne, Oakbank, Cape Magdalene, Cape Chatte, II.
8. Waseca, Insinger, IV.
9. Waseca, Hillsview, IV.
10. Waitefield, IV; Chaplain, IV; St. Albans, IV.; Sion, Insinger, III.
11. Insinger, II; Cartwright, IV.
12. Waitefield, III; Pakan, II; Bruce Mines, IV.; Shawinigan Falls.
22. Waitefield, IV.
26. Meota, I.
27. Waitefield, II; Insinger, IV.
30. Threehills Creek, Eckville, Meota, IV.
31. Waitefield, IV; Chaplin, IV.

Thunder recorded on :

22. Brome.
23. Alameda.
24. Alameda, Percé.
25. Alameda.

FORECASTS FOR DECEMBER, 1907.

The forecasts issued by this office at 11 p.m. each night, are posted up at every telegraph station in Canada, and are for the 24 hours beginning at 8 a.m. the following day.

The number of predictions issued during the month was 1249. These were divided as follows:—

District.	No. Issued.	VERIFIED.			Per centage.
		No. Fully	No. Partly	No. Not	
Alberta	76	67	7	2	92.7
Saskatchewan	76	65	9	2	91.4
Manitoba	119	72	6	1	94.9
Lake Superior	101	72	21	8	81.7
Lower Lake Region	119	90	18	2	90.8
Georgian Bay	119	106	8	5	92.4
Ottawa Valley	110	93	15	2	91.4
Upper St. Lawrence	110	97	12	1	93.6
Lower St. Lawrence	113	87	17	9	84.5
Gulf	110	91	16	8	86.1
Maritime Provinces, West	115	81	29	8	81.7
Maritime Provinces, East	116	89	22	5	86.2
Total	1249	1049	177	53	88.7

In order to obtain the percentage of verification of the predictions, the number partly verified is divided by two and added to the number fully verified, and the result divided by the total number issued.

In ascertaining to what extent the predictions have been verified, the reports from the agents at all observing stations, as well as the telegraphic reports, are used.

R. F. STUPART,
Director

Meteorological Office, Toronto,
31st January, 1908.

Author Canada. Meteorological Service Astron.
Title Monthly weather review 1907 Can.

DATE.

University of Toronto
Library

DO NOT
REMOVE
THE
CARD
FROM
THIS
POCKET

Acme Library Card Pocket
LOWE-MARTIN CO. LIMITED

